Who Lived in This House?

A Study of Koyukuk River Semisubterranean Houses

by A. McFadyen Clark

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Abstract

Who Lived in This House? is an ethnoarchaeologic investigation of three nineteenth-century semisubterranean houses. These dwellings occupied three small winter village sites near the Arctic Circle in an Athapaskan/Inupiat interface region of the Koyukuk River in Alaska. The book provides comprehensive information on house construction, with an analysis of contents and their locations on the living floors, as well as of human behaviours associated with the construction, occupation and utilization of space within the houses. A comparison of these houses with those from other regions of Alaska and the Yukon demonstrates that the Koyukuk River houses have more traits in common with late prehistoric Kobuk houses than with others. Faunal remains from the sites are also reviewed as possible indicators of differences in the ethnicity of the house residents. Methods of data collection are ethnoarchaeologic, and include oral tradition, ethnohistory (narrowly defined) and archaeology. Attributes of housing and the practice of paying respect to animal spirits are used as ethnographic models to interpret the findings.

In each house, Euro-American imported artifacts outnumber those of indigenous manufacture, but there are major differences in the types and quantities of faunal remains. When looked at against the author's stylized space-utilization plan (devised to better understand interactions and activities within the houses), analysis of the floor plots of objects and faunal remains shows distinct patterning, but only partially corroborates the utilization of space described by elders. Composite plots of male versus female objects, however, do fit the plan. Although the test for ethnicity based on ceremonial animal remains was not definitive given the small size of the sample and the short time period investigated, the proposition should not be overlooked as a possible indicator of ethnicity in archaeologic sites.

This study illustrates that using an ethnoarchaeologic approach to investigate human behaviours in late archaeologic contexts yields greater insights and confers a higher degree of validity to the results than using any single approach alone.

Résumé

Who Lived in This House? relate l'étude ethnoarchéologique de trois habitations semi-souterraines du XIX^{e} siècle. Ces habitations étaient situées dans les sites de trois petits villages d'hiver près du cercle polaire, dans une région interfaciale athapascane / inupiat de la rivière Koyukuk en Alaska. Cet ouvrage fournit des renseignements détaillés sur la construction des habitations; il analyse leur contenu et l'emplacement de ce contenu sur la surface habitée. Il étudie aussi les comportements humains associés à la construction, à l'occupation et à l'utilisation de ces habitations. Un comparaison entre ces habitations et d'autres trouvées ailleurs en Alaska et au Yukon montre qu'elles ont plus de traits en commun avec les habitations kobuk de la période préhistorique tardive qu'avec d'autres. L'auteure étudie aussi des restes fauniques trouvés sur les sites en tant qu'indicateurs possibles de différences ethniques entre les occupants des habitations. Les données ont été recueillies par des méthodes ethnoarchéologiques, dont la tradition orale, l'ethnohistoire, au sens strict, et l'archéologie. Les caractères particuliers au logement et aux rites associés aux esprits animaux ont servi de modèles ethnographiques pour interpréter les découvertes.

Dans chaque habitation, il y a un plus grand nombre d'objets d'origine euraméricaine que d'objets de fabrication autochtone, mais il y a des différences importantes dans les types et les quantités de restes fauniques. L'analyse de la disposition des objets et des restes fauniques sur les planchers par rapport au plan stylisé de l'utilisation de l'espace – conçu par l'auteure pour mieux comprendre les interactions et les activités qui avaient lieu à l'intérieur des habitations – montre une structure marquée, mais correspond en partie seulement à l'utilisation de l'espace telle que les anciens l'avaient décrite. Toutefois, la disposition des objets d'hommes par rapport à celle des objets de femmes cadre avec le plan. L'étude de l'ethnicité fondée sur les restes cérémoniels d'animaux dans les habitations ne s'est pas révélée probante car l'échantillon était trop petit et la période analysée trop courte, mais il ne faudrait pas ignorer la proposition comme un indicateur possible de l'ethnicité dans les sites archéologiques.

Cette étude montre que l'utilisation d'une approche ethnoarchéologique pour connaître le comportement humain dans un contexte de préhistoire tardive, procure une meilleure compréhension et un plus grand degré de validité que des résultats obtenus au moyen de toute autre approche unique.

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PREFACE AND ACKNOWLEDGEMENTS

Introduction

The Koyukuk River drainage of interior northcentral Alaska has a variety of natural environments and is an interface zone where Athapaskan and Inupiat cultures meet. Throughout the second half of the Wisconsin glacial stage, this strategically located sector of the Beringian Refugium was unglaciated. Archaeological evidence suggests that during at least the last 12,000 years the Koyukuk region, with its Batza Téna obsidian source, was in a sense a crossroads for cultures of the northwestern interior (McFadyen Clark 1974, 1978:130-134; D. Clark and McFadyen Clark 1977:31-38, 1980:141-159, 1993). To whom the remnants of the earliest industries belong, as well as when these early residents first arrived and later departed, is unknown. What is known with some certainty is that from about 400 AD until 1900 AD, the upper Koyukuk River region of Alaska was occupied periodically by both Athapaskans and Inupiat, and that some of the residents during this time period constructed and lived in semisubterranean houses.

It is the ubiquitous semisubterranean house, its contents, and the ethnic identity of its occupants that are the foci of this study.

The Koyukuk River Culture History Project

As recently as 1961, the middle region of the Koyukuk drainage, i.e., that area along the Koyukuk River that runs northeastward from the Huslia to the confluence of the John River with the Koyukuk, had escaped the attention of anthropologists and as a consequence the culture of the peoples living there had not been documented. The drainage, itself, was well known and had long been used as a highway to the northern interior. The Russian explorer, L.P. Zagoskin (1967), travelled up the lower part of the river as far as Kateel in 1842 in search of the much touted overland trade route between the Kobuk and Koyukuk drainages. It is this same village that later was surveyed and where semisubterranean houses were tested and partially excavated by Frederica de Laguna in 1935. The Koyukuk and its tributaries also were used as highways by other explorers, traders, gold miners, early geologists, missionaries and naturalists.

In February 1961, during a conversation at Yale University with Cornelius Osgood, the well-known father of Northern Athapaskan studies, and John M. Campbell, Brooks Range archaeologist, I was first introduced to the Koyukuk area. At this same meeting I learned that even at this late date these two anthropologists, as well as some of their colleagues, were uncertain about the ethnic identity of the residents of the middle and upper Koyukuk region. They were almost certain because of de

Laguna's work on the lower river that some of the residents were Athapaskans, but whether or not they were members of the Koyukon was unclear. If they were Koyukon speakers, was their dialect sufficiently similar to one of the two Yukon divisions of Koyukon to obviate classifying them separately? Based on information she had collected about Koyukuk people from her Yukon River informants in 1935, de Laguna (1947) stated that she believed that the Athapaskans living along the Koyukuk represented a third group of Koyukon speakers, although she had not conducted field work among them and thus did not have the data to back up her supposition.

Osgood and Campbell pressed on with their suppositions and suggested that other options were equally viable. These included the concept that an as yet unidentified tribe of Athapaskans lived along the upper reaches of the river and its tributaries. They also suggested that there might be an Inupiat or mixed Inupiat-Athapaskan population in the northernmost villages of Allakaket, Alatna and Evansville (Bettles). To me, the information from these two men made the Koyukuk sound as if it were the center of the northern North American anthropological universe. Was it possible that there were still Native North American villagers, bands, tribes for whom no written ethnology existed? Their recitation intrigued me sufficiently that before the end of the spring semester, 1961, I headed north to find my oasis and initiate the pilot phase of the Koyukuk River Culture History Project.

The 1961 study was designed to: (a) determine the size of the population and its ethnic identity; and (b) to undertake a preliminary archaeological survey in the Allakaket-Alatna region of the upper Koyukuk. During my first eight-month field season, the two primary objectives were met, but I had learned more importantly that the middle and upper Koyukuk was an interface zone where Inland Inupiat and Athapaskan cultures met. That first year I observed and documented contemporary life, collected genealogies, and initial information on settlement pattern, annual cycle, social organization and ideology. Most of the Indian and Inupiat residents were anxious to help my crew and me document their cultures. In fact, when we first arrived in Allakaket on 4 July 1961, one elder (O.N., Sr.) questioned me as to whether or not I had come to be "their anthropologist." This person went on to state that he had begun to think something was wrong with the Koyukuk people because no anthropologist had as yet come to write down their story.

On the basis of a highly successful first season, the fact that the cultures of the two native people living on the river appeared to be undergoing rapid culture change and that if traditional Indian knowledge was to be documented it must be done almost immediately, I designed a long-range anthropological salvage program. The program, as initially conceived, was to focus primarily on Koyukuk Koyukon Athapaskan culture. Inasmuch as the local Inupiat had ties with the Kobuk, Noatak, Anaktuvuk and Selawik people, I thought traditional ethnographies extant for those groups would suffice. This assumption was but one among many almost fatal errors I made during the conduct of the project. Because I had not had time to study about adjacent Inupiat groups before initiating the Koyukuk research, I did not know in 1961 that comprehensive ethnographies for them were almost nonexistent, except for Giddings' work on the Kobuk (Giddings 1952, 1956, 1961) and Ingstad's Nunamiut study (1954). I learned later that it was naive of me to think that the culture of the Koyukuk Inupiat would differ only in a few minor respects from that of their ancestral groups. Too, I was to learn that few if any other anthropologists had collected the type of in-depth information from related areas which were eventually recovered from the Koyukuk. My poor judgement and the differences in emphasis of studies conducted by other investigators have made definitive comparative studies among the several areas exceedingly difficult.

The long-range program for the project included the following aspects that contribute to the present study:

Archaeology: excavation of protocontact or contact village sites and survey of the middle part of the drainage to determine time depth of occupation

Ethnography: traditional and contemporary material, social and ideological culture through recovery of oral tradition from local residents and participant observation, i.e., a crash cultural recovery program.

Ethnohistory, *sensu stricto*: the collection and assessment of early written documents, photographs and other illustrations against which to compare information recovered during the oral history phase of the field research.

Several methods were used to collect information for the Koyukuk River Culture History Project. In this study, information derived from each is used. These include archaeologic survey and excavation, with full field-documentation records, photographs and artifacts; collection of oral tradition from local Koyukuk residents on audio tape and/or written by hand, as well as black and white and color photo-documentation; ethnohistory, *sensu stricto*, collected from archival and library research and recorded on audio tape, photo-reproduction and/or hand-written; and participant observation recorded by dictation on audio-tape and/or hand written, and by color and black and white photography.

Artifacts, film, photographs, audio-tape and field notes are on deposit in the archives and material collection repositories of the Canadian Museum of Civilization, Hull, Quebec. All are available for study with permission from the author, with the exception of the audio-taped excerpts from the Episcopal Church Archives, Austin, Texas. For access to the latter, permission first must be obtained directly from that archive.

Principal Manuscripts and Publications

The study presented in this volume, entitled, **Who Lived in This House? A Comparative Ethnoarchaeologic Study of Koyukuk River Semisubterranean Houses, Their Construction, Contents and Disposition of Faunal Remains**, is based on information collected throughout the entire field research period of the Koyukuk River Culture History Project (1961-1972). This segment of research is closely delimited in scope and focuses almost exclusively on semisubterranean houses, their construction, contents, and oral tradition attendant to their use. In many ways it is a corollary of the Koyukuk River Culture study published in 1974. That work also focuses on the problem of shared culture traits among Athapaskan and Inupiat residents of the Koyukuk drainage.

Koyukuk River Culture History Project papers and monographs published to date by major investigators, A. McFadyen Clark and D. W. Clark, listed in the references to this study are: McFadyen Clark 1970a, 1970b, 1974, 1974a, 1975, 1978, and 1981; McFadyen Clark and D. Clark 1974, 1976, 1978; D. Clark 1972, 1974a, 1974b, 1977, 1984a, 1984b, 1985; D. Clark and McFadyen Clark 1972, 1980, 1983, 1993; McFadyen 1966; Wheeler and Clark 1977).

Other research conducted among the Koyukuk or in their territory includes the following highlights: (a) initial excavation at Kateel by de Laguna (1947); (b) Robert Marshall's (1933) account of the mixed Native-Caucasoid community in the headwaters region; (c) the linguistics research and publications of the Summer Institute of Linguistics, by David and Kay Henry and collaborators (d) Alyeska or Trans-Alaska Pipeline archaeological mitigation from 1969 to 1975 at the headwaters and along the east side of the Koyukuk basin (Cook ed. 1977; Holmes 1973; University of Alaska 1970, 1971); (e) the National Park Service traditional subsistence study undertaken in 1976 and 1977 (Nelson 1983; Nelson, Mautner and Bane 1978, 1982) and Nelson's popular publication on Koyukuk River subsistence, **Make Prayers to Raven** (1983); (f) research and monographs, principally by Eliza Jones, published by the Alaska Native Language Center, University of Alaska, Fairbanks (cf. **Chief Henry** 1976); and (g) the settlement of land claims (ANCSA) and government activities in the north relevant to land withdrawals and transfers, the 14(h)(1) program, have stimulated further research into traditional settlement pattern and land use, especially that of Andrews (1977), Dissler (1979) and Arundale and Jones (1989).

A Note on Orthography Used in this Text

One critical shortcoming of this work is that the orthography used in the present text has not been standardized. This study crosscuts several Koyukon dialects and the information has been transcribed from audiotape and handwritten notes by several student linguists trained at different Canadian universities, each of whom used his/her own system of notation. Inasmuch as I am not a linguist, I have been unable to standardize the systems. Eliza Jones graciously worked with several of my student linguists by telephone and reviewed the orthography of the Koyukon words in Appendix II, but she did not have time to review the students' written work or complete standardization of the Koyukon terms used in the general text before she retired.

Text References and Citations

Information used in this study comes from many sources. References are given in the text for that based on archival research, ethnohistory *sensu stricto*, or the work of others, while quotes and/or specific information from Athapaskan and Inupiat consultants is indicated by their initials., Unreferenced text material is from my own field research.

Acknowledgements

Many persons and institutions have assisted me by providing analyses and data cited in this study, as well as in other Koyukuk River Culture History Project publications. To each I owe a debt of gratitude; and without their assistance this work would have been impossible. Errors in interpretation or presentation, however, are my own.

My husband, Dr. Donald W. Clark, not only accompanied me to the field during several seasons and worked with me on the majority of the archaeological excavations and analysis of the

material, he also assisted with the archival research and coordinated preparation of the illustrations. Without his invaluable assistance during the difficult period when I was completing my 12th year as Chief, Canadian Ethnology Service, Canadian Museum of Civilization, and his support during my transition to Curator Emeritus this work would not have come to fruition. David Morrison, Archaeological Survey of Canada, rendered further astute assistance in his pre-publication review of the manuscript.

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Nicole Boucher-White, in consultation with Anne Rick, National Museum of Natural Sciences Zooarchaeological Identification Centre, identified the faunal remains from the three houses examined in this study. Identification and technical research on Euro-American manufactures and trade goods was done by G.D. Rider, Assistant Director, National Museum of Science and Technology. Rider, in turn, consulted with numerous experts located in Ottawa and elsewhere. Neil Adiar and Rosemary Ravendra, Canadian Conservation Institute, Ottawa, tested specimens of red mineral pigment for blood. Samples of the pigment material also were identified by the Mineral Sciences Division, Canadian Museum of Nature.

Many historical, genealogical and other data come from unpublished sources, especially from the registers of the mission, Saint-John's-in-the Wilderness, Allakaket, Alaska, and from correspondence located in the Episcopal Church Historical Archives, Austin, Texas. I especially wish to acknowledge the former director of the archives, Dr. V. Nell Bellamy, for her assistance when I searched church records used in this study as well as in other Koyukuk River Culture History Project publications. David Laverie, then of the Archaeological Survey of Canada, prepared most of the finished drawings. Margery Toner, then Secretary to the Chief Ethnologist, assisted in proofing the final text and references, and Lise Lachance helped with the initial word processing.

The Indian and Inupiat people of the Koyukuk River are truly the ones who made this study possible. To them I extend my most sincere and heart-felt gratitude; and it is to them that this work is dedicated. Without the kind hospitality and keen acuity of my Native consultants in the villages of Evansville, Allakaket, Alatna, Hughes and Huslia, this monograph would have been impossible. Together we worked many years to document Koyukuk River culture history. I cannot name them all, but each in his or her own way gave me invaluable insights into subarctic lifeways. I especially wish to acknowledge the assistance received from my key consultants and their families: the Edward Bergmans, Sr.; Lydia and Lindberg Bergman and their family; Donald and Caroline Bergman: Sarah and Lee Simon; Bertha and Johnson Moses and family; senior residents, Annie and Jimmy Koyukuk and Grandma Ceza Bergman; Grafton Koyukuk; the Williams families, especially Effie and William, Janie and Robert, Jennie and Arthur, Mary and Peanuts, Kathleen and Joe, Sr., and Rita and Joe Williams, Jr.; Pauline and Simon Ned; Okpik Napoleon; Oscar (Kayak) Nictune, Sr., his son, Oscar Jr., and his daughters Bertha, Elma, Ann and Kitty and their husbands and families. Especial thanks must be extended to Jessie Bergman David and her husband, Harold David, at Allakaket, whom I have known since they were four years old.

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Grandma Julia; Maria Dummy; Joe Beattus and family; the Lavine Williams family and Rita and Joe Koyukuk. Finally, I wish to acknowledge my dear friends at Huslia, especially Lydia and Edwin Simon; Catherine and Stephen Attla; Chief Henry and Bessie; Big Sophie and Little Sammy Sam and their family; Robert and Mary Vent; Lillian and Franklin Simon; Angela Derendorf; Fred and Edith Bifeldt, and all the rest of the people of the Koyukuk. Finally, I wish to thank Eliza Jones, Athapaskan Linguist from the Koyukuk River, who has helped me with the orthography. Without her help, the Koyukon words used there would have been all but unintelligible.

CHAPTER 1
INTRODUCTION

From 1961 until the present, I have been interested in both material culture and cultural interface phenomena and in investigating diagnostic features in late prehistoric and protocontact sites in interface regions of the western Subarctic that may be useful as indicators of the ethnic affiliation of site occupants (McFadyen Clark 1974). The upper Koyukuk River region, Alaska (Fig. 1.1, upper in terms of the Koyukuk River Division of Koyukon, but geographically the middle Koyukuk River), is strategically placed for studying interface problems. It is here that four tribal areas meet: those of the Kobuk and Brooks Range Inupiat (Nunamiut) and the Koyukon and their linguistically disparate Athapaskan neighbors, the Gwitch'in. As well, it is an area where two ecological zones join: where the northern limit of the boreal forest abuts the mountainous tundra of the Brooks Range. In addition to being an area of Athapaskan-Inupiat contact, it is also one where persons from these two linguistic groups intermarried. The archaeologic record attests to its complex prehistory (D. Clark and McFadyen Clark 1975, 1993; D. Clark 1977), and the recency of conjunction with western culture -- it was in 1884-85 when white men first walked on this land -- enabled me to discuss contact phenomena and traditional culture with elders born before the period of rapid culture change (A. Clark 1970b, 1974).

From the 1898 Koyukuk gold rush until the present, Athapaskans and Inupiat have lived either together or in adjacent villages along the middle and upper Koyukuk River and its tributaries. How long members from these two ethnic groups may have been in contact prior to this time is unknown; and when the Inupiat residents, who have close ties with those on the Kobuk and Noatak rivers, first began to hunt and live in the Koyukuk drainage can only be postulated. Investigations of contact period semisubterranean houses and their contents in this interface region may not provide us with a yard stick for determining the time depth of dual occupation, but the results from such studies may be useful as a guide to differentiating the ethnicity of the occupants at specific sites.

At the time of contact both Koyukuk River Athapaskan and Inupiat families spent part of each winter living in semisubterranean houses to escape the intense cold. This type of winter dwelling was not unique to the Koyukuk drainage, but instead was widespread throughout the subarctic in both North America and Siberia. There were, however, major differences in the way they were constructed.

In the present study my primary interest is in investigating human behavior attendant to semisubterranean winter house construction, house contents and utilization of space within the house, and learning if, indeed, houses constructed by Koyukuk Athapaskans and Inupiat were as similar as they had suggested. As a secondary issue, I also continue my search for a better understanding of who lived in these houses. Seminal ideas for this study appear in two previously published overview articles entitled "Koyukon Athapaskan Ceremonialism" (McFadyen Clark 1970a) and "Koyukuk Koyukon Houses as Seen Through Oral Tradition and Through Archaeology" (McFadyen Clark and D. Clark 1974). Although these two papers may appear to deal with seemingly disparate parts of Koyukukculture, they focus on aspects of traditional life that are of primary import to both the Athapaskan and Inupiat residents of this interface zone: semisubterranean houses and ritual and belief.

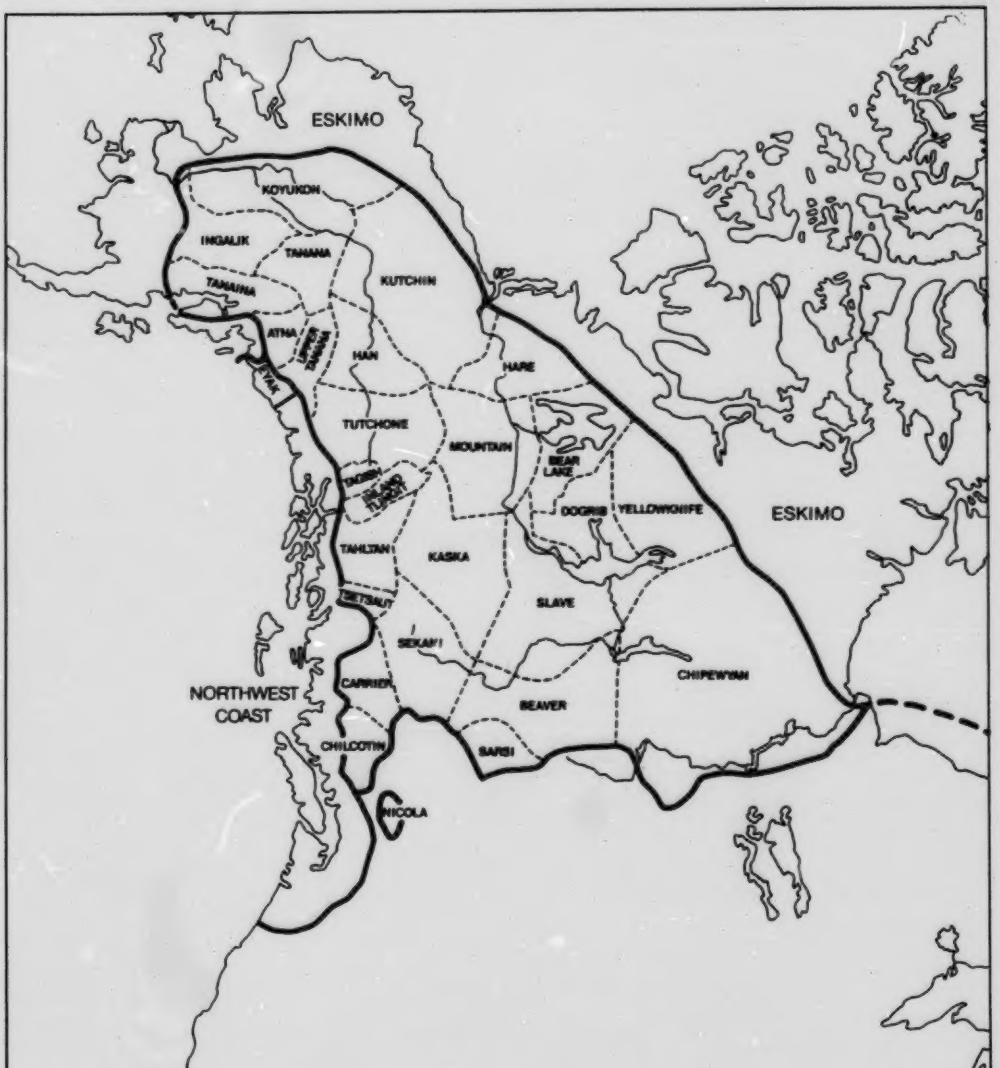

ESKIMO
KOYUKON
INGALIK
TANANA
TANAINA
KUTCHIN
ATNA
UPPER TANANA
HAN
EYAK
HARE
TUTCHONE
MOUNTAIN
BEAR LAKE
TAGISH
INLAND TLINGIT
DOGRIB
YELLOWKNIFE
ESKIMO
TAHLTAN
KASKA
SLAVE
TSETSAUT
SEKANI
CARRIER
NORTHWEST COAST
CHIPEWYAN
BEAVER
CHILCOTIN
SARSI
NICOLA

Fig. 1.1 Tribal territories in the 19th century showing major cultural divisions.

Purpose

The primary objectives of this research are fourfold:

1. To excavate and study the methods used to construct three semisubterranean houses selected from three two-house winter village sites in the Allakaket-Alatna region of the upper Koyukuk River, Alaska, that were built and used prior to direct conjunction in 1884-85 and to determine if there was variability in their construction.
2. To analyze the contents of the houses and to assess variations in content and their locations on the living floor to learn whether or not patterned behavior can be delineated from type and position of the contents.
3. To describe human behavior attendant to house construction, occupation and utilization of space within the houses.
4. To compare Koyukuk River house construction and content with those from other sites in Alaska and the Yukon.

As an adjunct to the primary issues, I also test whether or not it is feasible to determine the ethnicity of occupants of semisubterranean houses in this interface region, where minor differences exist between the Athapaskan and Inupiat practice of paying respect to animal spirits, by comparing faunal remains found on the floors of the several houses.

Approach, Models and Methods

In this study an ethnoarchaeologic approach has been used to interpret human behavior in an archaeologic context. Models for interpreting the behavior are drawn from my own observations and ethnographic research among the contemporary Koyukuk River Koyukon and Inupiat residents. Methods used to obtain the information upon which the analysis is based are participant observation, collection of traditional oral ethnographic information, archaeological survey and excavation, and review of ethnohistoric documentation, i.e., ethnohistory, *sensu stricto*.

Approach

Without presenting a detailed history of the development of ethnoarchaeology with its myriad variations as both an approach and/or a method used to interpret prehistory through ethnographic analogy (cf Ackerman 1970; Binford 1968; Chang 1967:227-234; Deetz 1968:285; Fewkes 1900:579; Giddings 1952, 1956, 1961; Hawkes 1954; Hodge 1897; Kramer 1979; Kroeber 1916; de Laguna 1960; Larsen and Rainey 1948; Longacre 1970; Parsons 1940; Schwartz 1978:vii; Steward 1942:337; Willey and Sabloff 1974:86-87; and especially Gould 1974, 1980), I shall outline briefly my definition of the term.

Ethnoarchaeology as I use it traces aspects of culture represented in archaeologic contexts to models observed in descendant living societies or to models conveyed in retrospective ethnographic information for periods that accord more or less with the date of the ancestral archaeologic remains.

This approach can be expanded to include analogy or interpretation of behavior in sites that lack continuity with the contemporary culture, provided that the contemporary culture upon which the models are based and the archaeologic sites being investigated share similar environments. But my use of this approach is restrictive, and the models developed and used to interpret information derived from field work on the Koyukuk River are based on direct continuity between the contemporary society and the prehistoric cultural remains excavated. My usage is limited to short-range periods and does not use ethnographic analogy to interpret culture beyond that time when definitive breaks in assemblages are noted, i.e., when differences are sufficient to indicate that the culture bearers were not ancestral to contemporary residents. Similarly, Koyukuk River Culture History Project models are season and feature specific. For example, the models used in this study have been designed to interpret behavior attendant to semisubterranean houses, their construction, content, and faunal assemblages in sites that date from the same period and region, e.g., somewhat similar to those used by Binford in his study of Nunamiut occupation in the Brooks Range (Binford 1968:287).

Models

The models used in this study center on traditional winter housing and ideology, especially that attendant to propitiation of animal spirits and disposal of faunal remains. They are based on contemporary and contact traditional Koyukuk River Athapaskan and Inupiat practices I observed or documented while doing anthropological research there between 1961 and 1972.

Almost immediately following my arrival on the Koyukuk I became acutely aware of the importance that Athapaskan and Inupiat elders placed on traditional semisubterranean houses used during the coldest winter months by members of both ethnic groups. I worked with several elders in the Allakaket-Alatna region who either had lived in them when they were children, or had visited people living in them. Elders from both ethnic groups considered this type of housing to be one of the most important factors in their ability to survive in one of the coldest inhabited regions in North America. During the summer of 1961 local Athapaskan and Inupiat residents took me to see the remains of two small two-house semisubterranean villages: one on a tributary of the Kanuti River (the Lake Creek site discussed herein) and the other on the Alatna (McFadyen 1966, McFadyen Clark 1974; McFadyen Clark and D. Clark 1974). They also used my U.S.G.S. topographic maps to point out locations of other semisubterranean winter villages along the Koyukuk and its tributaries. During this first year Athapaskan and Inupiat elders carefully described house construction, types of occupancy and space utilization (McFadyen Clark and D. Clark 1974).

Local emphasis on the importance of semisubterranean winter houses and my own interest in cultural continuity and change led me to document behavior in contemporary houses as well as in those occupied at the time of contact. It is the results from these observations and discussions that form the basis for the house model used in this study.

A second factor in survival, but one which undoubtedly even outranks that of winter housing in the eyes of traditional Athapaskan elders, is that of obeying cultural rules, especially those that deal with respect for animal spirits and disposition of faunal remains. Koyukuk River Inupiat share many traits in common with their Koyukuk Koyukon neighbors and relatives, including material culture, subsistence techniques, some myths and many legends. Major cultural differences between the two ethnic groups center on language and certain aspects of ideology. Elders from both groups understand and some speak one another's language, although they continue to use their own respective languages on occasion instead of English. Similarly, they are knowledgeable about one anothers' ideas and beliefs but usually practice only their own or those introduced by agents of Western culture. One exception is when interethnic Native marriages occur. In these cases children usually learn the practices of both groups, but when in public members from mixed families almost always elect to follow the rules of their hosts. In this interface region where ancestral Eskimos and Athapaskans appear to have been in intermittent contact with one another since *c* 500 A.D. (D. and McFadyen Clark 1975, 1993; D. Clark 1974, 1977), it is their beliefs and attendant taboos that appear to have been the most effective boundary maintaining agents (Barth 1969:9-16). Minor differences occur in particular taboos between the two groups and it is these that have caused the greatest amount of stress when interethnic marriages occur.

In this study, however, I shall discuss only one aspect of Koyukuk Athapaskan and Inupiat belief, i.e., that attendant to propitiation of animal spirits and paying respect to and disposition of animal remains (McFadyen Clark 1970a). In general, both groups pay respect to all game animals to ensure their continuing abundance and to preclude having spirit diseases strike down the hunters. For example, they feed dried fish and grease to lynx, wolf and wolverine after killing them; and they also observe special practices regarding game animals during female puberty and subsequent menstrual periods. Similarly, each followed the rule that bones from fish, aquatic mammals and sea birds should be returned to the water and all land mammal and other bird bones and their remains should be disposed of on land, particularly in high, dry places out of the reach of dogs and other carnivores. The major differences in showing respect to animals and disposing of their remains, between the local Athapaskans and Inupiat, center on practices attendant to mammals the Koyukuk River Athapaskans consider to have dual spirits: wolf, lynx, wolverine and especially bear. These were the important actors in transition world concepts, and it is they who were the "big men" of that time. I have already mentioned feeding wolf, lynx and wolverine immediately after they have been killed, but here the similarity stops. Traditional Athapaskans use circumlocutions when discussing these ceremonial animals, have special "parties" for them after death, butcher or skin them only in clean areas where women have not walked, and take special precautions if they are to be taken into a house where women reside who have not yet reached the menopause. Bear spirits were considered to be the most dangerous of all. Athapaskan women were prohibited from eating bear meat, attending bear ceremonies, and tanning their hides until after menopause. These special bear taboos, however, did not to my knowledge apply to the Inupiat.

My own indoctrination to these differences in belief between Athapaskans and Inupiat occurred during my first year of field work among these two groups. Introduction to spirit taboos was traumatic, but it illustrates the model used here to pinpoint the differences between local Koyukuk Athapaskan and Inupiat observances attendant to ceremonial animals. In the fall of 1961 after the local villagers from Allakaket and Alatna had returned from their fish camps or outside wage employment, an Athapaskan resident of Allakaket had a house-warming. Locally this is called a "new house potlatch," and is held after a cabin is built but before the residents move in. All local Athapaskan and

Inupiat residents, missionaries, teachers and anthropologists were invited. Native guests brought great quantities of food, including a tub of bear meat. Guests sat around the inside walls of the house seated by family group. I had the honor of sitting between the most highly respected male Athapaskan elder (EB) and my special Inupiat friend, (BM), who was married to an Athapaskan man. As the food was brought around in washtubs, BM encouraged me to take plenty of every thing so I could taste the various foods and also have a good supply to take home. Soon, a tub with chunks of meat that looked like heavy beef was circulated. I took a piece that I thought was eye-of-round. When I cut off a piece and put it in my mouth, the Athapaskan man to my left immediately said in a stern voice, "What are you eating?" I replied that I did not know, but that it was very good. He said, "You are eating bear; women your age can't eat it and are not even permitted to touch it." Following this statement I began to blush and turned bright red. The man immediately saw how badly he had embarrassed me, apologized, and then began to explain that Koyukon Athapaskan women who had not yet reached menopause were not permitted to say the word for bear, eat its meat, or tan its skin. Then he told me that later, when he had time, he would tell me more about special animal practices that I would need to know to live on the Koyukuk.

My Inupiat friend then came to my rescue. She assured me that I should not be upset because I had broken a local Athapaskan rule, told me bear meat was good to eat and explained that because she was Inupiat she was permitted to eat it, but that because she was married to an Athapaskan she refrained from doing so in public because she did not want to have him criticized by members of his own ethnic group.

Throughout the ensuing years of the study I was trained in traditional Athapaskan practices attendant to disposal of animal remains. Traditional exemptions were few, but for bear three were paramount: Those who were reputed to be exempt from the bear taboo were medicine women, women past the menopause and Inupiat women.

Following my introduction to paying respect to game, I tried to observe the Athapaskan pattern. Traditional Athapaskan families, with the exceptions listed above, followed the rules for disposal of faunal remains, non-traditional and young acculturated families were lenient in observing traditions and in families where both parents were Inupiat, few precautions were taken when disposing of bones, scales and other faunal remains.

Although my documentation is uneven because I concentrated primarily on Athapaskan traditions, it is sufficiently complete to pinpoint observable differences in disposition of faunal remains between these two groups. In my attempt to determine the ethnicity of the inhabitants of the houses investigated in this study, I have used treatment of faunal remains as one possible indicator. A shorthand rule for this might read, "All things being equal, if there are bones from ceremonial animals, especially bear bones, in the house site, it should not be Athapaskan."

Methods

Because of the time frame covered and the approach used in this ethnoarchaeologic study, four methods were used to collect the information:

1. Participant Observation. During this eleven-year study, I lived modest parts of six years

on the Koyukuk. Most of the time was spent in the villages of Allakaket and Alatna or at fish camps adjacent to the arctic circle. Shorter periods of time were spent in Hughes and Huslia along the middle and lower river. While in the villages and camps, sometimes in my own quarters and at others with either Athapaskan or Inupiat families, I carefully observed daily life and paid especial attention to practices attendant to ideology and belief. Observations were typewritten, dictated on audiotape or written in longhand for future reference.

2. Oral Tradition. Each year throughout the field period, I concentrated on collecting information on traditional Koyukuk River Athapaskan culture. When time permitted, I also documented traditional Inupiat culture. This phase of the research was initiated with elders, but before it was completed members from all age groups participated. Children between five and twelve years old were especially interested in telling me myths, helping with genealogies and working on the Swadish word lists. During the first season, oral tradition was documented by hand and the notes typed, but from 1969-1972 most of it was taped. The method of documentation was selected by the consultants. In later years, most elected to use the tape recorder and only the shy or reclusive people preferred to tell "stories that you could write down later."

3. Archaeologic Survey and Excavation. This was the key method employed to document the semisubterranean houses and their contents. Details of the excavation techniques are provided in Chapter 4.

4. Ethnohistory, *sensu stricto*. To supplement the oral tradition and place Koyukuk culture in context with the mainstream culture history of the times, a wide variety of historical documents were reviewed. These included exploration journals and reports, geologists journals and reports, miners journals, missionary records, Revenue-Marine documents, ships' logs, early newspaper reports, health service records, etc. This phase of the research has been on-going and was conducted at several institutions, including the Library of Congress, Washington, D.C. , in 1962; Episcopal Church Archives in Austin, Texas, in 1973; at the University of Alaska Archives, Fairbanks, in 1980; and in 1978 and 1987 at the Yukon Historical Archives, Whitehorse. D.W. Clark collected additional ethnohistorical information from the Rasmussen Library Archives, University of Alaska, Fairbanks, in 1981; from the University of Alaska Archives, Anchorage; and the Yukon Historical Archives, Whitehorse, in 1983. Between 1977 and 1988, I examined Koyukon material culture objects at the Smithsonian Institution, Washington, D.C.; Peter the Great Museum of Anthropology and Ethnography, St. Petersburg; The Lowie Museum, University of California, Berkeley; and the University of Alaska Museum, Fairbanks.

Scope of Report

In the present chapter, I have outlined the purpose of this investigation, and discussed the approach, models and methods used to obtain my results.

Chapter 2 sets the stage for the study by describing the natural environment, history, and culture of the peoples of the Koyukuk, places the study in context and provides a basis for comparisons and conclusions presented in Chapter 7.

The third chapter is an introduction to the villages and house sites that are the foci of this study. Descriptions of the structures, micro-environments, and natural resources are presented and local history and oral traditions are reviewed for each house.

House excavations and their reconstructions are described in Chapter 4. There, three successive levels of information, each with increasing detail, are presented to explicate semisubterranean house construction.

In Chapter 5, the contents of the houses are identified, classified and described, and their spatial distribution patterns on the living floors are discussed.

The primary foci of Chapter 6 are the techno-historiography of both trade goods and indigenous objects recovered from Koyukuk River semisubterranean houses, and a comparison of the Koyukuk houses and their contents with those from approximately the same time period in other parts of Alaska and the Yukon.

Finally, in Chapter 7, I restate the research problems, summarize the results from the research and discuss temporal and regional relationships, test the hypothesis that differences between Athapaskan and Inupiat disposition of faunal remains may serve as indicators of the ethnicity of occupants of traditional sites in interface regions, discuss the relative efficacy of the several methods used to obtain my information, and present my conclusions.

CHAPTER 2

NATURAL ENVIRONMENT, HISTORY AND CULTURE

A paramount feature of the history and culture of the Koyukuk River region, and at the same time one of the simplest of propositions that can be made about it, is that until well into the contact period it was absolutely obligatory for everyone living there to pursue a subsistence economy. The alternative was starvation. In the precontact and protocontact periods subsistence came from the land. Metal tools, pots, firearms, canvas tents and other technologies that arrived at the beginning of the protocontact period may have made it easier to obtain a livelihood, but early trade links did not provide food, except for a modicum of sea mammal oil imported from the coast. The Russian traders, as well as the British, did not have foodstuffs to trade, and although the American traders did, until 1893 it was necessary to make an expedition to the Yukon River to obtain trade commodities. The economy has emphasized subsistence self-sufficiency to the present day, and until the last few decades the bulk of provisions purchased by Koyukuk Athapaskan and Inupiat residents consisted of a relatively short list of staple items. It follows that the natural context in which traditional subsistence took place and the resources upon which it was based are overriding factors that must be considered in order to understand Koyukuk River culture history.

This chapter then sets the stage upon which the Koyukuk story was enacted and provides an overview of the lifeways of its residents during the protocontact and early contact horizons. Overview vignettes of the natural environment, history of the Koyukuk drainage and traditional lifeways of the Koyukuk River Athapaskans also provide the context for the ethnoarchaeologic investigation of semisubterranean winter houses. A parallel cultural sketch for the resident Koyukuk River Inupiat is not given, but by its omission I am not implying that the cultures of the two ethnic groups living along the upper Koyukuk in late prehistoric and protocontact times were identical even though their exploitative techniques shared many features in common. Athapaskans and their culture have been used as a referent because they represent well over 75 percent of the present Native population and according to oral tradition they were the traditional inhabitants of the region, while the Inupiat only used the region seasonally until they immigrated there sometime during the 19th century. Another reason for using the Koyukuk River Koyukon for the cultural example is that I have more complete information for them than I have for the local Inupiat. For additional information on the traditional lifeways of the inland Inupiat who moved to the Koyukuk from the Kobuk and Noatak rivers, I recommend the works of Giddings (1952, 1956), Hall (1971, 1976) and Anderson, Bane, Nelson et al 1977). In most respects, local Inupiat culture was similar to that of the Athapaskans, with the exceptions of language, kinship and certain aspects of ideology. Material culture, family groupings, task forces and methods of exploitation of natural resources in postcontact periods were similar to those of the Athapaskans. Oral tradition collected on the Koyukuk suggests that these same similarities and differences existed in protocontact and perhaps earlier periods.one

In this chapter I present only overviews. When more specific information is required in the chapters that follow to illustrate specific points, additional supportive information is provided there.

For example, in Chapter 3, where I discuss local environments for the excavated sites, I have added additional information for clarity.

The Natural Area and its Resources

Natural Environment

The Koyukuk River culture area runs northeastward along the Koyukuk River through the low arctic and subarctic boreal forest zone of north central Alaska, and has its northern terminus above the arctic circle in the foothills of the Brooks Range (Fig. 2.1). The major part of the Koyukuk drainage is relatively low, but it is intersected by mountainous regions which rise 4000 feet above the valley floor. Its general topography is one of rolling, maturely dissected uplands of moderate elevation, with higher, more rugged terrain in the Ray Mountains and the foothills of the Brooks Range. Inversely, extensive lowlands or flats lie along the main and tributary river basins. These are underlaid by permafrost.

The climate is continental and is similar to that of much of interior northern Alaska. Summers are short and comparatively warm and winters are cold and long, with annual temperature extremes ranging between +90 degrees F and -80 degrees F near Allakaket, the focal point of the study area where the Alatna and Kanuti rivers join the Koyukuk. In the regions both below and above the Allakaket/Alatna area of the drainage, the winters are less severe. There, however, freezeup occurs most often between 1-10 October and spring breakup usually comes between 15-25 May. There is little total precipitation, although there are a few rainy days in the summer. Permafrost retards seepage and thus the surface is, as a rule, well watered.

Resources

Flora. Arboreal flora of the drainage include white and black spruce, willow, poplar (aspen and cottonwood), white birch and alder. In open areas one finds shrub tundra. Here grow a few dwarf black spruce, smaller willow species and shrub birch, cladonia and other lichens, an abundance of arctic flowering plants, and the grassy tussocks which severely impede travel. Lowbush cranberries, blueberries and other berries of minor importance are found in a variety of habitats. Forest fires, as well as permafrost, topography and soils, have shaped the distribution of the vegetation.

Mammals. Koyukuk drainage mammals (Table 2.1) are discussed according to large game and small game categories. Species information (Alaska's Wildlife and Habitat 1973, reprinted 1974; Alaska's Wildlife and Habitat Vol. 2, 1978) indicates the habitat or areas in which particular animals are most likely to be found, seasonal variations in their location, and migratory habits. These factors are of special importance to the harvesting plan or annual cycle. Long term variations or cycles in abundance further determine the availability of important resources and may necessitate adjustment of the annual cycle. In the text only the most significant species are discussed.

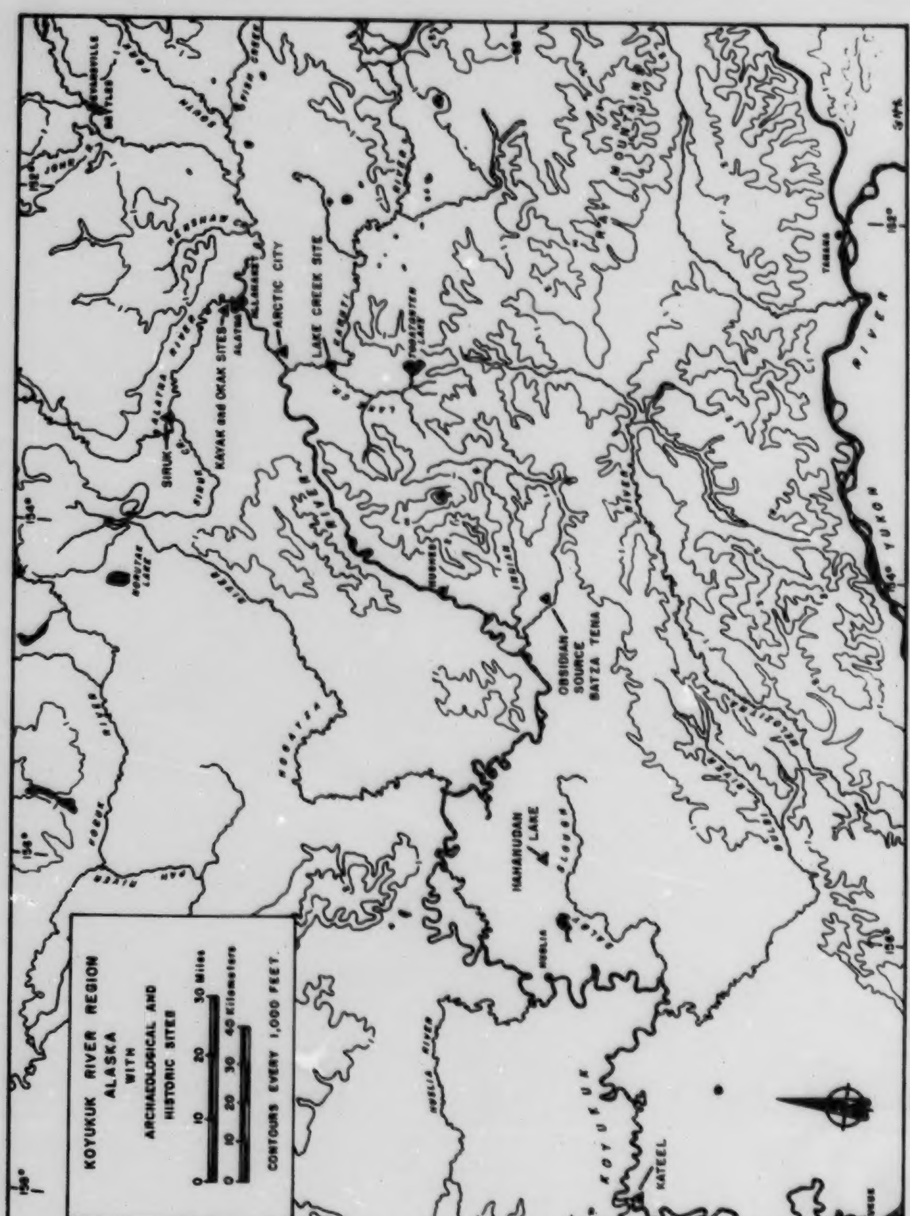

KOYUKUK RIVER REGION
ALASKA
WITH
ARCHAEOLOGICAL AND
HISTORIC SITES
0 10 20 30 Miles
0 10 20 30 40 Kilometers
CONTOURS EVERY 1,000 FEET.
ARCTIC CITY
LAKE CREEK SITE
KAYAK and OKAK SITES
SIRUK
ALATNA
ALLAKAKET
HUGHES
OBSIDIAN SOURCE BATZA TENA
HAHANUDAN LAKE
HUSLIA
KATEEL
KOYUKUK
TANANA
YUKON
RIVER

Figure 2.1. Koyukuk River region showing contemporary settlements and archaeological sites.

TABLE 2.1. ECONOMICALLY IMPORTANT MAMMALS IN THE KOYUKUK REGION

Order Lagomorpha	
Snowshoe or varying hare	*Lepus americanus*
Order Rodentia	
Hoary marmot	*Marmota caligata*
Arctic ground squirrel	*Citellus parryi*
Beaver	*Castor canadensis*
Muskrat	*Ondatra zibethicus*
Porcupine	*Erethizon dorsatum*
Order Carnivora	
Gray wolf	*Canis lupus*
Red fox	*Vulpes vulpes*
Black bear	*Ursus americanus*
Brown (grizzly) bear	*Ursus arctos*
Pine marten	*Martes americana*
Short-tailed weasel (ermine)	*Mustela erminea*
Mink	*Mustela vison*
Wolverine	*Gulo gulo*
River otter	*Lutra canadensis*
Lynx	*Lynx canadensis*
Order Artiodactyla	
Moose	*Alces alces*
Barren Ground caribou	*Rangifer arcticus tarandus*
Dall sheep	*Ovis dalli*

Black bear (*Ursus americanus*) use a wide range of habitats, although they prefer open forest and especially areas of mixed habitat. They are found throughout the Koyukuk region. On the basis of native hunting and my own sightings, it is estimated that this animal is moderately abundant in the area adjacent to the house sites featured in this study.

Brown bear (*Ursus arctos*) are present in most parts of the middle and upper Koyukuk region, especially the northern subalpine valleys. The population is estimated at one animal per 100 square miles, far fewer than black bear.

Wolverine (*Gulo*) inhabit nearly all places where food, such as meat, carrion and berries, can be found. For this sparsely distributed species they are relatively common.

Barren ground caribou (*Rangifer tarandus*). The Koyukuk drainage provides the winter range for a substantial portion of the Arctic herd, and during one recent period part of the Porcupine herd wintered on the eastern side of the river. According to Koyukuk consultants, in the past when caribou were abundant a local population remained in the region throughout the year. The Arctic herd migrates southward, passing Allakaket and Alatna in October and early November. It returns to the north through the Brooks Range in the spring, but most hunting is done in the Autumn. Residents from the northern Koyukuk River villages intercept the migration and, as well, formerly stalked the animals after they had reached their winter range on the forested hills to the south. Caribou have been subject to marked variations in abundance, verging sometimes on nearly total disappearance from the area. Allen (1887) reported this to be the case in 1885, and records show that there was little increase in the abundance of caribou in the drainage until the 1920s.

Dall sheep (*Ovis dalli)* are found in the alpine region of the Brooks Range. Although they usually are not resident within Koyukon core territory, they were exploited by hunting expeditions to the north. They are rarely taken as far south as Bettles (Murie n.d. Box 2 Folder 1).

Moose (*Alces*) are the largest of the deer (females 800-1200 pounds; males 1000-1600 pounds) and rank next to caribou as the main item of red meat in the Koyukuk diet. Moose are adaptable to a wide variety of habitats, but they thrive on transitional vegetation like that which develops in burned over areas following fires or grows along river bars. During the spring, summer and autumn they are numerous in the Kanuti Flats. Winter grounds are found along the Koyukuk and Alatna rivers and other tributaries. During the last decades of the 19th century and early in the present century, they were rare in the Koyukuk drainage. Meat was then obtained during long trips to the east, especially to the Dall River.

Lynx (*Lynx canadensis*) habitat on the Koyukuk is very good, although abundance depends on the hare population which is cyclical. They are trapped and hunted by Koyukuk Athapaskans and Inupiat, and formerly, as in the 1970s, their pelts were used both locally and traded.

Marten (*Martes americana*) is important to the commercial fur trade of the Koyukuk. This animal is localized in mature spruce or mixed forest stands. Although marten is never eaten except in periods of famine, at the time of contact their tails were used as ornaments.

River otter (*Lutra canadensis*) are numerous along the Koyukuk flood plain, and are also found in tributary drainages. Formerly they provided food as well as furs, but they do not appear to have been an important food item.

Excellent beaver (*Castor canadensis*) habitat is found along small tributary streams. On the Koyukuk, populations are moderate to high. However, this animal is subject to fluctuations due to flooding, disease and over harvesting. Beaver figure prominently in both the indigenous and later commercial fur trade of the area and as well are an important food animal.

Muskrat (*Ondatra zibethicus*) is an important source of fur for both trade and local use. Their meat is considered to be a delicacy and is especially prized in the spring. Localized muskrat habitat is good, but they are listed as being only moderately abundant.

Snowshoe hare (*Lepus americanus*) are found throughout the area and are moderately to heavily utilized for food. They were important in the past when moose and caribou were scarce, but hare are subject to 10-year cycles during which they run from extremely abundant to nearly absent.

Porcupine (*Eurethizon dorsatum*) are moderately numerous throughout the region, but are subject to severe local depression of numbers (traditional information). Although they are primarily a forest animal, their distribution is not limited to treed localities. They have always been of minor importance as a food item, and usually are not over hunted. Koyukuk residents rank the porcupine very high as an emergency food item, because they are easy to kill. This factor places them in the category of a semi-protected species.

Additional species used by the Koyukuk include mink, weasel, marmot, squirrel, wolf and fox as shown in Table 2.1.

Fish. Fish (Table 2.2) is one of the major subsistence items in Koyukuk economy. Many species are caught in the rivers and, formerly, at lake outlets. The species discussed below have been harvested (McPhail and Lindsey 1970, Morrow 1980, State of Alaska, Alaska's Fisheries Atlas 1978).

Each summer the salmon make their way up river to spawn in the sloughs and smaller tributaries. Next in importance are whitefish of several species. Grayling, sheefish, ling cod (loche), pike, and suckers, are also taken, as formerly was the blackfish. In addition, lake trout (*Salvelinus namaycush*) are found in lakes connected with northern tributaries and arctic char (*Salvelinus alpinus*) may be present. With the exception of the blackfish, which occurs in tundra or muskeg lakes, these species are found in the Koyukuk River and its larger tributaries. Grayling, in some cases salmon, smaller species of whitefish, and smaller individuals of burbot and pike are found in lesser tributaries and lakes.

Sheefish (inconnu) equal and sometimes exceed salmon in size. They overwinter in the Yukon delta and reach the Alatna River at the end of September during their annual spawning migration. Spawning takes place along the Koyukuk just above Hughes and in the Alatna at Siruk Creek. Small least ciscos (herring) are reported to be abundant in lakes and slow-flowing streams. The humpback whitefish is a moderate-size fish, usually weighing three to five pounds. It spawns in river shallows and on lake reefs from mid-September to mid-October, as also does the comparable broad whitefish.

King salmon, the largest of the salmon, are not especially numerous in the Koyukuk system. Like the chum salmon they reach the area from the sea by or before the middle of July; the farther down the river the earlier their arrival. The main thrust of the salmon run is composed of chum or dog salmon. These enter many of the smaller streams to spawn.

Silver salmon are a minor component of the Koyukuk runs and arrive later than the others.

Arctic grayling migrate from ice-covered lakes and large rivers to small tributaries to spawn from April to June. As winter approaches they move back to the large rivers and deep lakes. Locally, during migration, large numbers may be taken in smaller streams.

The small (15-18 cm) pond-dwelling blackfish was an emergency resource in winter when no other food could be found. They were caught by placing small basket traps vertically at holes where large aggregations of blackfish come up from their oxygen deficient habitat to gulp air.

Northern pike overwinter in the larger rivers. In the spring they move to spawning grounds and then to feeding grounds in shallow or sluggish waters and along the shores of lakes.

The longnose sucker is caught in the rivers, especially in August.

Burbot can reach a considerable size (60 lbs in Alaskan lakes). Until relatively recently they were taken in traps in the main river during their early winter migration.

TABLE 2.2 ECONOMICALLY UTILIZED FISH OF THE KOYUKUK REGION

Whitefishes	(subfamily *Coregoninae* family *Salmonidae*)
Sheefish (inconnu)	*Stenodus leucichthys nelma*
Least cisco ("herring")	*Coregonus sardinella*
Round whitefish	*Prosopium cylindraceum*
Broad whitefish	*Coregonus nasus*
Alaska (Humpback) whitefish	*Coregonus nelsoni*
humpback whitefish	*Coregonus clupeaformis* complex or *C. pidschian*
Trouts and salmons	(subfamily *Salmoninae* family *Salmonidae*)
King salmon	*Oncorhynchus tshawytscha*
Chum (dog) salmon	*Oncorhynchus keta*
Silver salmon	*Oncorhynchus kisutch*
Grayling	(subfamily *Thymallinae* family *Salmonidae*)
Arctic grayling	*Thymallus arcticus*
Mudminnow & blackfish	(family *Umbridae*)
Alaska blackfish	*Dallia pectoralis*
Pike	(family *Esocidae*)
Northern pike	*Esox lucius*
Suckers	(family *Catostomidae*)
Longnose sucker	*Catostomus*
Codfishes	(family *Gadidae*)
Burbot (loche, ling)	*Lota*

Avifauna. A number of different species of birds were eaten on the Koyukuk, and still are. These include particularly migratory ducks, geese and other waterfowl and the resident willow ptarmigan (*Lagopus*) and spruce grouse (*Canachites canadensis*). Spruce grouse (spruce hen) and ptarmigan occur generally throughout the region, and during the 1960s and early 1970s when I was in residence on the Koyukuk they were relatively abundant in the study area. Willow ptarmigan are subject to 7- to 9-year cycles during which their numbers change markedly. Waterfowl are found in wetlands throughout the region, either at rest in the water or on muddy banks and drying swales during migration, or where there is nesting and feeding habitat. Nearly all low-lying areas of the Koyukuk drainage are classified as waterfowl habitat, and the Kanuti flats is especially important as a North American breeding area.

Culture History

In order to better understand the cultural milieu in which residents of the semisubterranean houses in the study area lived, this section reviews highlights of Koyukuk prehistory and presents an outline of key events that occurred during the protohistoric or indirect contact period just prior to home-territory conjunction through the initial contact- traditional period. In Table 2.3, key historic events are listed in tabular form for ease of reference. Especially integral to the history of the Koyukuk region is trade; and most of the artifacts recovered from the houses excavated there reached their former owners through commercial transactions. In this study, however, the time-depth, nature and mechanisms of trade are touched upon only briefly. For additional information on Koyukuk River trade from the precontact horizon through the early 1970s, see McFadyen Clark (1974, 1978) and McFadyen Clark and D. Clark (1974, 1976).

Prehistory

Earliest recognized occupation of the Koyukuk region dates from the time of Palaeo-Indian hunters who used fluted-style points, probably between 10,000 to 12,000 years ago (D. Clark 1974b; D. Clark and McFadyen Clark 1977, 1980, 1983, 1993). During succeeding millennia the Koyukuk drainage was occupied by diverse peoples, including ones who made side-notched points, i.e., the Northern Archaic tradition. During the first millennium A.D., the area near Huslia was occupied by people of Ipiutak culture, or a Norton-derived affiliate (D. Clark 1977) usually attributed to ancestral Eskimos. At this time, or slightly earlier, the last of the presumed Northern Archaic Indian people who produced side-notched points were living a short distance farther up the river near the present village of Hughes. Another occupation characterized by implements distinctively different from any of the preceding, called the Lake 324 complex, is radiocarbon dated tentatively to the beginning of the present millennium. These implements may be Athapaskan Indian in origin, but on the basis of present artifact assemblages it is not possible to link any of these occupations to the ancestors of contemporary Koyukuk River Koyukon (D. Clark 1974b).

Except for a few largely unassociated artifacts, including pottery, a grooved splitting adze, grinding slab, and a radiocarbon dated cache pit (D. Clark 1977), there have as yet been no material culture objects recovered that can with certainty be assigned to late prehistoric Koyukuk Koyukon. Houses excavated at Kateel (de Laguna 1947), an abandoned village on the Koyukuk south of the study area, are two or three decades older than those reported here, but they also are of 19th century origin.

A prominent feature of the Koyukuk region is the Indian River obsidian source, Batza Téna, and its associated flaking stations. This is one of the few obsidian sources known to exist north of the Alaska Range (Patten and Miller 1970; D. Clark and McFadyen Clark 1975, 1980, 1983), and it is the source for the major obsidian type traded over the greater extent of Alaska (J.P. Cook personal communication to A. Clark). Additional types of obsidian also come from this source (Wheeler and Clark 1977).

TABLE 2.3. KOYUKON HISTORIC EVENTS

Period	Date	Characteristic or Event	Source
Prehistoric	10-12 KA	Paleo-Indians, Nenana Complex of Tanana Valley, fluted points	Powers et al,
	10.7 KA	Extraterritorial trade in Koyukuk obsidian begins.	D. & A. Clark various
	10.7-8 KA	Palaeo-Arctic tradition (micro-blades). Late fluted points?	D. Clark various
	9-3 KA	Late Cordilleran, Northern Archaic (notched point) and Late Denali (amalgamated Paleo-Arctic & Northern Archaic) assemblages.	
	AD 200?	Latest Late Denali/Amalgamated people on Koyukuk at Batza Téna.	D. Clark 1984
	500-800	Norton-Ipiutak people living north of Huslia at Hahanudan.	D. Clark 1977
	11OO?	Lake 324 complex at Batza Téna & other, later and scattered, remains show pronounced change in style & technology from what preceded.	D. Clark 1974
Protohistoric		Indirect contact.	
	1649	Russian post on Anadyr provides extra stimulus for native trade between Asia and North America.	Bogoras 1904-1909 1:53-54
	1789	Anyui trade fair established on	Ray 1964

		Kolyma R. provides further base and Eurasian goods for intercontinental native trade.	
	1832	Trading post established on Kuskokwim among Ingalik, later named Kolmakovskiy Redoubt	Zagoskin 1967: 251-252 Oswalt 1980
	1833	Russian trading post and transfer point established at St. Michael.	Zagoskin 1967
Direct conjunction on lower Yukon & lower Koyukuk; contact-traditional period begins	1837	Glazunov makes contact with Koyukon in their own territory on Yukon R.	Zagoskin 1967: 146-147, 189
	1838-1841	Malakhov reaches Nulato on Yukon R. In 1839 builds cabin, first post among Koyukon; burned; rebuilt, expanded & permanently manned in 1841.	Zagoskin 1967: 146-147, 183
	1839	Koyukon ravaged by smallpox.	Zagoskin 1967
	1843	Koyukuk and Yukon R. explored by Zagoskin to confluence of the Kateel and Nowitna rivers respectively.	Zagoskin 1967
	1844	Russian Orthodox priests arrive at St. Michael (and later visit the Yukon and establish mission there).	Loyens 1966: :115
	1847	Ft. Yukon established by Hudson's Bay Co. above Koyukon territory; stimulates intertribal contacts.	Murray 1910
	post-1847	Koyukon obtain muzzle loaders from Ft. Yukon & Kotzebue Sound through intertribal trade.	Starbuck 1878: 450; Raymond 1900; Murray
	c 1848-1875?	Raids by Kutchin & Tanana people destroy Talowa, Sithleymenket and Dobendaktonten settlements.	Fieldnotes

	1851	Nulato massacre: one of many Koyukuk R. division raids against Lower Yukon Koyukon.	Fieldnotes; Bancroft 1886
	c 1866	Fear of reprisals from 1851 Nulato causes movement of some members of Koyukuk R. division up the Koyukuk R.	Fieldnotes
Opening of the interior through exploration	1865-1867	Western Union Telegraph parties explore Koyukon region of Yukon R. 1st recorded ascent of Koyukuk R. as far as Kateel after Zagoskin.	Dall 1870; Whymper 1869 Adams 1982
	1867	U.S. purchases Alaska; administration, trading, and treatment of Natives changes starting in 1868.	
	1868	Additional trading posts established along middle Yukon.	Mercier 1986
	1869	Nulato trading post reestablished but not continuously maintained	Raymond 1900: 22, 24
	1870-1873	Petitot and other Roman Catholic missionaries reconnoitre Yukon and baptize Indians at Nulato	Loyens 1966: 116; Thomas 1967:42
	1877	Seghers makes winter trip from Nulato up Koyukuk to Huslia region.	Mildred 1943 Seghers 1880
	1881	Prospectors enter middle Yukon R. region, overwinter at Tanana Sta.	Bettles 1967
	1883	Epidemic kills many people on Yukon and Koyukuk river.	Allen 1900
	1883	Yukon River explored.	Schwatka 1885
Direct home territory conjunction with middle and upper	1884	Mayo goes overland from the Yukon to trade with Koyukuk at Konootena.	Allen 1900
	1885	Allen contacts Koyukuk at Konootena	Allen 1900,

Koyukuk R. bands		and elsewhere during exploration; is first to describe mid-upper drainage.	Fickett nd
	1885-1886	Zane explores trade route from upper Kobuk to middle Koyukuk, Nulato and St. Michael.	Stoney 1899
	1886	Gold prospecting becomes an economic-historic factor, beginning at Hughes and extending up river to the Southfork River and headwaters.	Bettles 1967
	1887	Intensive missionization and education begins along Yukon; Roman Catholic mission established at Nulato. St. James Mission and and school establ. at Tanana.	Thomas 1967; U.S. Bureau of Education 1893 Prevost 1892
	1888	Bremner killed by Koyukuk at Dalby, first steamboat ascends Koyukuk to that juncture with posse which executes purported culprit. This has far-reaching repercussions.	Chase 1947
	1893	First trading posts established in upper Koyukuk region by Bettles and Moore at (old) Arctic.	
	1895	Medical missionary at St. James Mission, Tanana; hospital built there by 1900.	U.S. Bureau of Education 1896 Rowe nd
	1897	U.S. Post Office opened at Nulato (and elsewhere along Yukon River).	Couch 1957
	1897	First steamboat ascends Koyukuk R. as far as upper region.	
	1897-	Gold rushes: several thousand prospectors enter Koyukon territory on Yukon and Koyukuk (1 year later).	Schrader 1900: 458; Grinnell 1901:32.

		Extensive two-way traffic by boat and overland peaks *c* 1900 with 46 steamers in operation; trading posts establ. along Koyukuk at new Arctic City, Bergman and Bettles.	Maddren 1913: 76; Mendenhall 1902
	1899	Upper Koyukuk Indian population congregates seasonally near South Fork and Arctic City/Bergman.	Fieldnotes
	1890-1905	Lower and middle Koyukuk R. pop. declines with movements to Yukon R. and into upper Koyukuk region.	Fieldnotes
	1899	U.S. Army arrives in Yukon valley, Ft. Gibbon establ. near Tanana.	Cantwell 1902
	1900	Measles and food shortage kill 58-67 Koyukon at Nulato.	Cantwell 1902
	1901	Telegraph links St. Michael and other points along the Yukon.	Loyens 1966: 114
	1902, 1905	Reindeer herds establ. near Nulato & Bettles; impact on Koyukon is nil.	U.S. Bureau of Education 1906
	1903	Conversion of river boats to oil decrease jobs for Koyukon.	Kitchener 1954:112
	1905	At Bettles, first school opens on the Koyukuk River.	Stuck 1906, 1906a, 1914
Early village period	1906	Episcopal Mission St. John's-in-the Wilderness establ. at Allakaket, with a day school and medical missionary. Indians and Eskimos settle near the mission.	Burke 1961

Protohistory and Extraterritorial Contact

Early contacts among Native North Alaskan peoples, undoubtedly arising in part from the obsidian trade, impacted on Koyukuk culture (McFadyen Clark 1978), but there is no evidence that they caused radical changes in indigenous lifeways. The stimulus of indirect trade with Asia and with the Russians, the latter potentially as early as 1650 (Table 2.3), may have had greater effects, although it is unlikely that more than a few token European goods entered Koyukon territory before the late 18th century. Small bits of Asian iron reached the Koyukuk drainage during the first millennium A.D. (D. Clark 1977), and possibly later during the second millennium.

But, the Russians were coming. By 1832 they had established Kolmakov Redoubt on the Kuskokwim River; in 1833 they established St. Michael on the Bering Sea coast south of the Seward Peninsula; and in 1838 they reached the site of Nulato in Lower Yukon Koyukon territory. The latter two posts were established at strategic locations on the coast and interior to intercept furs and other goods that were being traded by Alaskan Athapaskan and Inupiat traders to their Siberian counterparts. Nulato, and perhaps St. Michael, gave the Koyukuk Athapaskans their first opportunity for direct trade with Europeans. Russian contact brought with it epidemic diseases, particularly smallpox, as well as material goods. Lt. Zagoskin explored the lower Koyukuk drainage in 1843, although he did not ascend beyond the Kateel River, well south of the present study area (Zagoskin 1967). He noted that there was a flourishing overland trade from the Koyukuk River to the vicinity of Bering Strait, which operated through Koyukuk Athapaskan and Kobuk Inupiat middlemen. Long-distance native trade continued into the later decades of the 19th century, especially indirect trade with whalers on the Chukchi Sea, again through Koyukuk Athapaskan and Kobuk Inupiat middlemen (McFadyen Clark 1974). Intertribal trade for native goods continues to the present. Zagoskin observed that people from the upper Koyukuk River went to Kateel or other points each spring to trade furs for tobacco, beads, and ironware. On their return they preferred to go home by the Yukon River, portaging overland to the Koyukuk (Zagoskin 1967).

According to native tradition, in 1851 a Russian and his native guide, who were searching for Sir John Franklin, went up the Koyukuk as far as Dalby or an adjacent settlement in that area (perhaps Kateel), where they were killed. After killing the intruders whom they had mistaken as "spies" from their enemy tribesmen on the Yukon, the Koyukuk Indians and their Inupiat allies, who already had assembled for a memorial potlatch, descended upon Nulato and the Lower Yukon Koyukon to effect what has become known as the infamous Nulato massacre (Chief LH; Murray 1910)). By 1851 the Koyukuk Athapaskans also were obtaining goods, at least indirectly, from the Hudson's Bay Company at Fort Yukon (Murray 1910).

In 1877 Bishop Seghers made a winter trip up the Koyukuk, probably as far as the Huslia River or possibly beyond to the Dakli River (Mildred 1943). He was accompanied by itinerant traders who evidently had prior knowledge of the region and probably had made similar trips earlier.

Penetration of upper Koyukuk territory lagged for nearly another decade before traders, military explorers, and prospectors entered the region. But by this time many Natives from the area had had contact with the Americans at Tanana and at other points on the Yukon River. A reasonable amount of Euro-American trade goods were being used on the Koyukuk River prior to direct home-territory conjunction in 1884-85, and some effort was being expended to obtain these items (JW,Sr.).

In 1885, Lt. Allen (1887), the first explorer to make direct observations on the upper Koyukuk, found the people in an impoverished state because game was scarce and there had been a recent epidemic. Even earlier, at the beginning of the American period in 1867-68, Dall reported that the Koyukuk people whom he met on the Yukon were in trouble:

> From increased immorality, due to the introduction of liquor, the births are few, and hardly replace the deaths. Few women have more than two children, while many have only one, a large proportion being barren. The tribe, therefore, may be regarded as on its way to extinction (Dall 1870:53).

Direct Conjunction

In the 1880s the pace of activity on the Yukon River was accelerating. In 1881 the first prospectors reached the middle Yukon region (Bettles 1967:109, 1972). The first steamer fleet was formed in 1883 when the *St. Michaels* and *New Racket* were commissioned and joined the tiny *Yukon* which had been on the Yukon River for several years. Soon Yukon River prospectors began looking north to the Koyukuk; and the U.S. Army sent military officers to Alaska to explore its remote regions. One of these, Lt. Allen, explored the Copper, Tanana and Koyukuk rivers in 1885 (Allen 1887). His narrative and maps, and the brief notes of his companion, Pvt. Fickett, provide the first direct information on the middle and upper Koyukuk drainage. A few months later, from December 1885 to February 1886, Engineer Zane of Lt. Stoney's Kobuk River exploration group crossed the southwestern part of Koyukuk territory enroute to St. Michael by way of the Pah, Koyukuk and Yukon River (in Stoney 1899/1900:802 ff.).

After a difficult trip overland from the Yukon River to the Koyukuk drainage, Allen reached Konootena at the mouth of Lake Creek on the Kanuti River (Allen 1900:456; see Chapter 3). There the party purchased two canoes, descended the Kanuti River, and started their ascent of the Koyukuk. No settlements were reported on the Koyukuk above the Kanuti until the party reached the mouth of the Alatna River (present-day Allakaket). There on the west bank of the river Allen saw a semisubterranean house and a spruce bough tepee; both were vacant.

Allen continued up the Koyukuk River:

> We were at the mouth of the Nohoolchintna River [SouthFork] on which is situated an Indian village about equal in size to Konootena village.... This is the village toward which our camarades de voyage, the Koyukuns, were making. It is...the last settlement on the Koyukuk....(Allen 1887:28, 103-105).

After reaching the mouth of the John River, he turned back and began his descent of the Koyukuk. Almost immediately after beginning his down river trip, Allen met an Inupiat who had been trading with Athapaskans at South Fork (Allen 1887:102). His narrative notes that more numerous settlements were located along the middle and lower reaches of the river than along the upper river. Summarizing his exploration, he emphasized the destitute condition of the natives, which, according to him, was due to an epidemic during the winter of 1882-83 and to the scarcity of game. The account gives several details on traded technology and game:

> Many of the Koyukuns are armed with old-fashioned rim-fire Winchester magazine rifles, caliber .44, which have been obtained, through the Eskimos, from Whaling vessels. While possessing this gun, it is seldom that it can be utilized for want of cartridges. Besides these they have shotguns, usually the single-barrel muzzle-loader, and bows and arrows.
>
> Fish food is sufficiently abundant to support them, but the prospects of obtaining clothing material are rapidly growing darker. It is a mistaken idea, that of supposing the interior of Alaska [is] possessed of much large game.

> ...during...[the Koyukuk trip and much of the travel that which preceded and followed it] we did not see a single moose or caribou, and but one bear, a small black one (Allen 1900:478-80).

Zane's winter trip in 1886 from the Hogatza or Dakli southward is not of direct relevance because of its southerly venue. It is important to note, however, that one of the native houses in which he stayed is identified as a log cabin. This appears to have been the same cabin that Fickett saw under construction a few months earlier at the lowermost settlement above the mouth of the Koyukuk (Fickett n.d. for Aug. 20). Except for cabins built by traders at the mouth of the Kateel River (Allen 1900; Fickett n.d. for Aug. 19), this occurrence may mark the beginning of the shift from semisubterranean winter houses to cabins on the Koyukuk. Concurrently, Fickett (n.d. for Aug. 18) saw a double semisubterranean house, comprised of two units connected by a tunnel, located farther up the river, apparently at the settlement located near Dalbi designated as "Red Shirt's" by Allen. Oral tradition tells of a prominent man from that area who had so many wives that he had to build an addition to his dwelling. He connected the addition to the main building by a tunnel (Chief LH, ES). For the South Fork River, located a short distance north of the house sites described in this volume, there is an oral account of a semisubterranean house that was still in use when prospectors first entered the area after 1888, but probably before the gold rush (JW, SS). Historic information, described herein, provides important time markers for house types.

Following Allen and Zane's explorations, little information was recorded about the Koyukuk drainage until the rush of gold miners into the upper Koyukuk and its headwaters at the end of the 19th century. The first gold rush information pertains largely to prospecting. One of the earliest prospectors, John Bremner, who had accompanied Allen to the Koyukuk in 1885, was killed on the Koyukuk near Dalby in 1888 during his second season of prospecting on the river. A group of Russian metis and white prospectors, to which Bremner was peripherally attached, was in the drainage at that time. His murder did not remain secret for long, and the purported culprit was hanged by a posse the next year. The party of vigilantes, consisting of prospectors and traders from the Yukon River, made the first ascent of the Koyukuk by steamer in the diminutive *Explorer* (Bettles 1967, Callahan 1975, Chase 1947, Davis 1967). On this trip the steamer went only as far north as the Dalby River, but in 1888 the prospectors reportedly went up river as far as the mouth of the John. During this period they usually traveled overland to the Koyukuk after having spent the winter on the Yukon at such places as Tanana Station.

In 1889 and 1890 prospectors again went overland from the Yukon to the Koyukuk, following the Old Man trail to the Kanuti River and down it to its confluence with the Koyukuk. This route is the one used earlier by Allen. Those who went overland and down the Kanuti in 1890 found Joe Ladue and A. Harper, of later Klondike fame, already on the river "at the forks" with the small steamer *New Racket* (Harris n.d. identifies this as the juncture of the South Fork and Koyukuk). One report states that they had spent the winter there (Davis 1967:63). If this unverified report is correct, it identifies the first time that white men spent the winter on the Koyukuk River. Harper and Ladue may have traded with the Native people, as well as prospecting.

Contact Traditional Period

By the early 1890s (1892 according to the *Yukon Press*), gold had been found on the bars of the upper drainage, above the area in which the Koyukuk Indians had their winter homes. But the Koyukuk gold rush had yet to come.

In 1892 Captain William D. "Billy" Moore, accompanied by his Russian-metis wife, Mary Laning, and in partnership with Gordon Bettles, ascended the Koyukuk in the small steamer, *Cora*, with a barge load of goods and established the first trading post on the upper Koyukuk (Chase 1947, Bettles n.d., Moore n.d.). During the first winter, the store was located in the vicinity of the Hogatza and Indian rivers. After breakup the following spring (1893), the post was moved upriver to a site five miles above the mouth of the Kanuti River. This new location was named "Arctic City." The store was strategically located for trading with both the native residents and the increasing number of prospectors who were entering the Koyukuk drainage. Late in 1893, Bettles and his wife, the former Sophie Kokrine, joined the Moores and some prospectors who together spent the winter at Arctic City. During a trip back to Fort Adams (Old Station, near Tanana), Bettles helped print the first issue of the *Yukon Press* to which he contributed a long article describing prospecting on the Koyukuk and, particularly, the mining ground on the upper Koyukuk to which many prospectors were to rush less than half a decade later. He advised that they were well supplied with assorted stock at Arctic City.

On 1 June 1895, it was stated in the *Yukon Press* that the Koyukuk Mining District was turning out well, but six months later Bettles' store was closed; and on 1 January 1896 the Yukon Press reported that the "recent gold excitements of Birch and Munook Creeks [near Rampart on the Yukon], have drawn the miners away from the Koyukuk River, chiefly from an easier access to those diggings."

By the end of 1895 the first ripple of gold fever had already passed through the Koyukuk region, but the tempo of activity on the Yukon was building up to rush proportions with strikes near Rampart, in the Forty Mile country, and on the Klondike near Dawson. Also during this period, settlements and trading posts were established in many areas of Alaska, but none were located in the Koyukuk district. Traffic on the Yukon also increased and numerous larger steamers now plied the river. During the same period, Athapaskans on the Yukon River were missionized by Roman Catholics, as well as by the Episcopalians and their Church of England associates. Religious activity attracted many Koyukuk Athapaskans to the banks of the Yukon. The South Fork band members had relatives living near Rampart and Stevens Village, and during the late 1890s, more South Fork people and also many persons originally from the Huslia-Dalby band went to Stevens Village and vicinity. Some stayed there, but most of the latter, who had gone over in two movements about 1896 and 1898, returned after living a year or two on the Yukon. Earlier, many persons from the Kanuti-Todatonten band also had gone to the Dall River where they joined Old Stephen's and Jacob's band (White n.d.).

As Bettles had presaged in remarks to the *Yukon Press*, the pause on the Koyukuk was brief. In 1898 nearly 2000 miners surged up the river, others traveled overland from the Yukon, and some came over from the west after an unsuccessful rush to the Kobuk River. At the same time as the miners came from the Kobuk, there was an influx of Inupiat from that region. They came to join their relatives who were living on the Alatna and to work in the gold fields. Most of the miners were headed for the gold prospects located on tributaries above the Koyukuk Indian villages, but trading posts and short-lived miners' settlements were established along the middle river (Fig. 2.1). Many of these settlements were located where a steamer or group of prospectors over-wintered, and most were occupied for only a season or two. Cabins were built at Chief Moses' Village or Arctic City, which initially was called "New Arctic" because it was located a short distance from Bettles' old abandoned Arctic City site. Bergman, another one of the more persistent posts, was established a short distance above Arctic City, at the mouth of Bergman Creek between the Kanuti and Alatna rivers. It served as a trading post and freight transfer point. From this point on, only shallow-draft steamers could go farther up the river. When the miners left, Arctic City became a native village. Two other short-lived settlements, Peavy and Union City, were built near the mouth of the South Fork River adjacent to the central base for the South Fork band. Farther up the Koyukuk, Bettles established a post bearing his name near the mouth of the John River, at the northern periphery of the South Fork band and accessible to the local Inupiat as well as to those who came to the Koyukuk from Anaktuvuk Pass. Bettles trading post was not abandoned until the 1950s, and today the name is perpetuated by a nearby settlement, Bettles Field.

After the 1898-99 goldrush, most prospectors left the river. Very few remained south of Bettles and there were only a few hundred persons in the gold fields of the upper drainage. Additional discoveries and minor rushes followed (Dissler 1979), but these details are not important here.

Government exploration of the region was continued by geologists and topographers. Many important events were to transpire on the Koyukuk River: establishment of the mission of St. Johns-in-the-Wilderness and the villages of Allakaket and Alatna about 1907; abandonment of Arctic City soon thereafter; the rise after 1900 and demise within a few decades of South Fork village; establishment of Hughes, initially to service mining at Indian Mountain; and resettlement of the Dalbi-Dakli region with eventual consolidation of middle river residents first at Cut-Off and later in the contemporary village of Huslia. These events, however, postdate the time frame of the present work.

It is apparent from the changes in trade, transportation, mining development, and housing, that for the Native people the second half of the nineteenth century was a period of tremendous technologic and logistic change. The last two decades of the century particularly were a time of marked change in demography, population distribution, and settlement pattern on the Koyukuk River. Families were ravaged by disease and epidemics, and this, together with scarcity of game, led to hard times. Early during this period people began to move out of the Kateel-Lower Koyukuk band area to live along the Yukon River. Later, a large number of those in the Huslia-Dalbi-Dakli area who had not already succumbed to disease also moved (Jetté n.d. a). Some of these middle-river people went to the Yukon River, but many moved up the Koyukuk to the Kanuti River area, which at this time was underpopulated, and about 1899 they consolidated their central base at Arctic City. The latter essentially superseded and absorbed the small Kanuti-Todatonten band to whose members the lake Creek site described in this report is attributed. Some people moved further north to Allakaket which, when the lower Alatna house sites were occupied, was South Fork band territory. From the 1880s until the gold rush, increasing numbers of Inupiat began moving to the Koyukuk, principally from the upper Alatna and the Kobuk. By 1900 they had established their own village, Alatna, near the confluence of the Alatna River with the Koyukuk, although a few Inupiat continued to live with the Athapaskans at Allakaket.

Koyukuk River Koyukon Lifeways

The Koyukuk River Indians are members of the Koyukon (Kaiyuk N) tribal-linguistic group -- the northwesternmost Athapaskans of Alaska. They inhabit regions adjacent to the middle Yukon River, the Kantishna River as far south as Lake Minchumina, and the Koyukuk River as far north as the south slope of the Brooks Range (Fig. 1.1). No tribal unity is recognized. They are fragmented into a number of bands or territorial groups, and speak at least three dialects that are not completely coincident with contemporary cultural subdivisions (Krauss and Golla 1981).

Koyukon speakers have been variously divided into two or three major divisions (Fig. 1.1) on the basis of criteria different from those of Krauss' (1973:907-908) three linguistic groups (Zagoskin 1967; Osgood 1936:14; de Laguna 1947:27 ff; McFadyen Clark 1974). In this study my interest centers on only one of these, the Koyukuk River division which extends northeastward along the Koyukuk to the southern flanks of the Brooks Range (see Fig. 2.1). This division is complicated by the presence of two sub-dialect groups distributed as follows: (a) the South Fork subdivision, plus some people from the Todatonten-Kanuti subdivision which at the time of contact appear to have spoken Upper Koyukon (also called Inner Koyukon, cf. Krauss 1973), and (b) the remainder of the Todadonten-Kanuti group plus the Huslia-Dalbi-Hogatza subdivision, which share some speech similarity with both Krauss' Upper and Middle Koyukon, but mostly with the latter in down-river areas (Middle formerly was called Outer).

Certain aspects of social organization and ceremonial lifeways of the Koyukuk differ significantly from those of the Lower Yukon division. Group partitioning by sociocultural instead of linguistic criteria, appears to reflect what the local Athapaskans themselves consider to be realistic. Members from both divisions have long interacted with their Inupiat neighbors. As a result, their culture bears unmistakable marks of Inupiat influence, although local interaction was with different Inupiat tribes. On the Koyukuk interaction was primarily with Inupiat who originally came from the Kobuk, Selawik, Noatak and the Anaktuvuk Pass regions, but on the lower Yukon it was primarily with Inupiat from Norton Sound and Seward Peninsula, although they also traded periodically with those from the Kobuk.

Highlights of Recent Koyukuk Culture (1960-1970)

The contact-traditional culture baseline for this study dates from the time of conjunction in 1885, but to set the work in context an overview of contemporary culture is described first. Contemporary Koyukuk culture, especially in the 1960s and early 1970s when my direct observations were made, exhibited extremes and dichotomies between generations, with memories of a not-too-far-in-the-past contact-traditional culture discussed and partially practiced by the elders, along with the repatterned and imperfectly understood rural American culture in which all people were enmeshed. Increased use of modern technology had drastically reduced the amount of time earlier spent for subsistence and maintenance-related endeavors, but there was no replacement for these by other satisfactory time-consuming activities.

In 1970 the total native population of the Koyukuk River, including both Athapaskans and

Inupiat, was less than 550 people (McFadyen Clark 1974). Throughout most of the year the people lived in well-appointed, insulated log cabins in the three major villages of Huslia, Hughes and Allakaket with Alatna. Nearly all houses had electricity and some (in Hughes) had inside bathrooms with toilets and bathtubs. Most families owned chainsaws, a dog team, several snowmobiles, sleds, wood or aluminum boats and outboard motors, a large armory of hunting and sporting weapons, a washing machine and in Hughes and Huslia a deep freeze.

Villages were inhabited year around, but some families still spent part of each summer at their fish camps or commuted between village and camp. Adults and preschool children went on short trips to spring camp to take waterfowl, muskrats, and to fish. Men and some women spent short periods away from the villages during the fall and winter trapping and hunting bear, caribou and moose. Some young males also hunted during the Christmas and Thanksgiving school recesses. However, these trips were becoming one-night stands and only infrequently did a hunter take his family with him or spend more than a week away from the village at a time. All children of school age attended the first eight grades at schools in their own villages. After they graduated from grammar school, those who decided to attend high school and/or university left the Koyukuk to go to high school in Fairbanks, Anchorage or other centers in Alaska or Chemawa in Oregon. Most students who elected to go to the university went to the University of Alaska, but some chose schools in other states. Subsistence was still based on hunting, fishing and fur trapping, but less time was spent in obtaining food and furs by these means. Wage labor outside the village in gold mines, construction, and forest fire-fighting had become increasingly important as had local jobs.

Political awareness had heightened over the years and there was consolidation of power in the hands of the elected village chiefs and council, in the extra-village Tanana Chiefs' Association and in the Doyon Corporation which is an instrument of the land claims settlement. Nearly all Koyukuk are members of the Episcopal Church and some had taken active roles in religious activities, for example by becoming lay readers and members of the Bishop's committee. At the same time there was compartmentalization of earlier beliefs in the supernatural, especially by the elders (McFadyen Clark and D. Clark 1978).

Contact Traditional Culture

Exploitative groups and territoriality. At contact the Koyukuk Athapaskans, estimated to have been about 300 people (Fig. 2.1), were central-based wandering hunters and fishermen who lived in small groups and exploited rather well-defined regions from the mouth of the Koyukuk River northeastward along its course to the foothills of the Brooks Range. Their territory was subdivided into at least four regions which were both exploitative and residential in nature. Within each of these the social group was the band with its semipermanent villages, households and family units. Figure 2.2 defines these bands and shows their spatial relationships. Bands were small and at the time of conjunction, i.e., direct contact in their own territory, the two upper ones may not have had many more than fifty people each (McFadyen Clark 1974); but the two lower Koyukuk bands were much larger (Allen 1887). Although band population was small, each covered a large but defined territory, at least fifty to seventy-five miles across. Large territories were a requisite, because the carrying

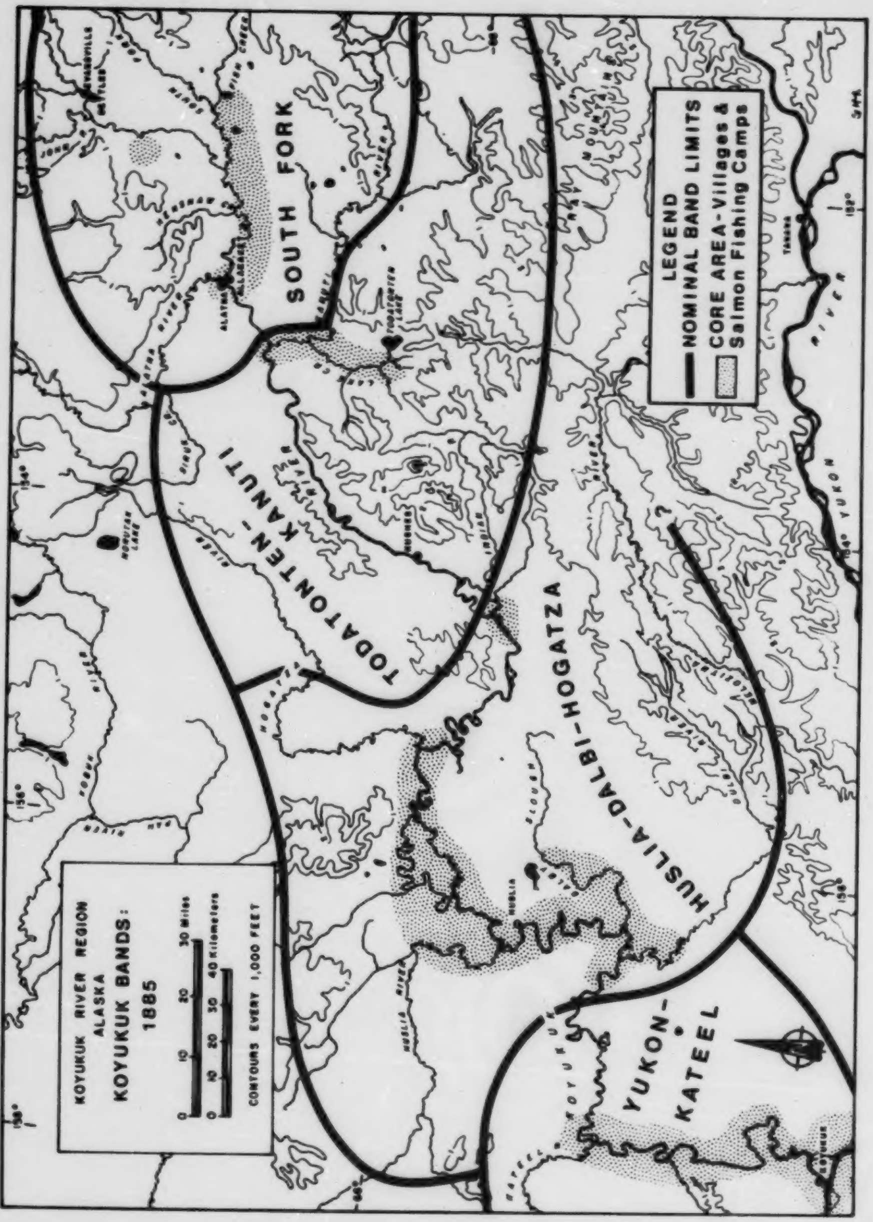

KOYUKUK RIVER REGION
ALASKA
KOYUKUK BANDS:
1885
0 10 20 30 Miles
0 10 20 30 40 Kilometers
CONTOURS EVERY 1,000 FEET
LEGEND
NOMINAL BAND LIMITS
CORE AREA-Villages & Salmon Fishing Camps
SOUTH FORK
TODATONTEN-KANUTI
HUSLIA-DALBI-HOGATZA
YUKON-KATEEL
YUKON
RIVER
KOYUKUK
TANANA
HUSLIA

Figure 2.2. Koyukuk River bands.

capacity of the land was extremely limited.

Bands were based on a core of matrilineal extended families, to which a few other, sometimes unrelated people frequently attached themselves. Two primary families or one small extended family usually inhabited a dwelling and together they formed a household unit. A hunter who had a large polygynous family had a dwelling of his own. Two households, sometimes more on the lower river, often were located close to one another and formed a village. There also were single-house settlements. Members from these smaller aggregates, i.e., family, household and village, variously worked together as cooperatives within the band territory during the year. Periodically, members from several villages and sometimes from different bands exploited resource areas together. Some sections of each band area were shared communally, while others were considered to be family-held property. Beaver houses and ponds, muskrat swamps, fishing locations, sometimes bear hibernation holes, certain big game territories where fences were built, and berrying grounds adjacent to fish camps were privately controlled. Most big game habitat and fowling and berrying grounds, however, were considered open land.

Persons from the several bands recognized affiliation with one another and marriage was nearly exclusively restricted to liaisons within the Koyukuk division, especially among the three up-river bands. Ideally they also were band exogamous. Some individuals, however, married Inupiat, and a few Athapaskan babies were adopted by Inupiat hunting/trading partners. Just as no tribal unity was recognized, there were no division or band chiefs. However, at the band as well as at the semipermanent village level, there were "rich men," "big traders," or caribou fence and fishtrap "bosses," as well as important warriors and medicine people. At times a single individual played all these roles and it was to him the others turned for guidance or who independently exercised leadership.

Social structure. The Koyukuk had a matri-Iroquois system of nomenclature for determining kin relationships. At the time of direct contact in 1885, descent, and in most instances inheritance, was reckoned lineally through one of three exogamous matrisibs (McFadyen Clark 1975). Sib as well as band exogamy was the rule for choosing marriage partners and early matrilocal post-nuptial residence was preferred. Shamans, however, were considered to be exempt from sociocultural prescriptions and sometimes made band/sib endogamous and/or extra-ethnic group marriages.

Both the sororate and levirate were practised, as was polygyny. In most polygynous marriages the man had only two wives, but some wealthy men had many more. Polyandry also was extant, but it usually was not of the fraternal type and seems to have occurred primarily as an exigency in times of population stress. Marriage partners were selected by one's parents and liaisons were based on the skills of the respective partners and the standing of their families. Additional wives also were sometimes obtained through barter, and rich men and shamans selected whomever they wished as spouses. Divorce was easy, but sometimes resulted in physical violence between parting couples. Following divorce, the correspondents went their separate ways. Women and their own children usually returned to their parents' houses where they stayed until they remarried.

Elaborately detailed mortuary ceremonialism was attendant to death, a time the Koyukuk considered to be very dangerous because the newly released life spirit of the deceased could wreak havoc with his fellow persons if it so desired and could take them with him to the land of the dead. Following death, people from a different sib prepared the body for its journey. Subsequent disposal of the body of the deceased set in motion a series of feasts or "potlatches" that culminated in a major "feast-for-the-dead," preferably held during the winter solstice a year after death.

Ideology and belief. The Koyukon view of their supernatural universe was based on a concept of all-pervading spirits who controlled the world and constantly posed obstacles to the maintenance of health and welfare of the people. Through time they developed a system for dealing with the spirits in their universe which stemmed from their *hodonzitnee* or transition world myths (McFadyen Clark 1970a; Jette 1907, 1908-09). This involved a network of taboos and concomitant practices and abstinences which permeated the fabric of their culture and permitted people to meet effectively the challenges advanced by their unseen adversaries. Concomitantly, their entire repertory of myth and legend was rich and highly developed. Koyukon oral tradition, which was used to teach young people the ways of the culture, as well as to entertain, has central themes that include Raven myths, the culture hero *Kik'tal kani* cycle, orphan boy makes good, cannibals and giants, sky-earth motifs, the bushman, feats of legendary persons and shamans, riddles, and anecdotal stories. On the Koyukuk, shamanism played a guiding role in the lives of the people, and there shamans almost always charged for their services.

We have seen that upon the death of humans, special ritual practices were followed. Similarly, the killing of a bear, lynx, wolverine, and in earlier times, a wolf, was followed by ritual and a "feast." Other animals, for whom a "potlatch" was not given, were treated with respect when they were killed. The bones, skins, hair, and inedible parts of game animals, birds and fish were supposed to be disposed of in the correct manner to ensure that they would be able to return to life, procreate, and be a continuing source of food.

Ceremonial feasts were held during the winter solstice when members from the local group, and frequently guests from other groups, met to celebrate during the period when the "long and short days meet." Memorial feasts for the dead frequently were held at the same time. Activities included exchange of gifts, banquets, distribution of food, speeches by elder sib members, games such as snowshoe races and feats of strength, dancing and presentation of newly composed songs. This also was a time for business and trade. Thus in many respects, ceremonial gatherings paralleled trading festivals.

Intertribal contacts. Frequently, in regions where cultures meet and there is between them a diversity of natural resources, both trade and hostility are prevalent. The Koyukuk is no exception. At the time of contact the Koyukuk River Athapaskans were at the same time middlemen in interior-coastal trade and also almost continually engaged in internecine raiding.

The Koyukuk had long played an important role in aboriginal intertribal commerce, trading interior goods to Inupiat from the coast, where in turn, some Alaskan Inupiat bartered North American goods to their Siberian counterparts in exchange for both Native and European items. In fact it was for the specific purpose of intercepting the Native inland-coastal-Siberian trade that the Russian traders first explored the Yukon drainage and established their deepest interior post at Nulato. Inter- and intra-divisional trade was transacted both at intermediate points on the Koyukuk and elsewhere at trade fairs (A. Clark 1974). Larger trade "fairs" were held annually at Nuklukayet on the Yukon near the mouth of the Tanana and at Norton Sound where the Russians later established St. Michael. Occasionally a Koyukuk trader accompanied his Kobuk partner to the major Inupiat fair at Hotham Inlet on Kotzebue Sound.

From precontact times until about 1870, the Koyukon carried out internecine raiding, not only between divisions but also between families within the same division, with the Inupiat and with other neighboring Athapaskan tribes. One of the better known altercations was the Nulato Massacre of 1851, although according to Native consultants it was but one among many ongoing raids between the Koyukuk and the Lower Yukon division people. Exclusive of intra-Koyukon relationships, the lines of least hostility, especially for the upper Koyukuk River people, were with the Kobuk and Nunamiut Inupiat, whereas greatest hostility obtained with their Gwitch'in-speaking neighbors to the east.

Annual Cycle of Subsistence Activities. The Koyukuk annual cycle was distinctly structured in terms of times, places, types of activity and types of interaction units (Fig. 2.3). Family and group alternatives existed for all stages of the annual cycle. In the one outlined here and illustrated by figures 2.4-2.13, I present a generalized cycle as an expediency. It is important to note that in all instances the Alatna River use area illustrated overlaps with that of the Inupiat. By 1900 the Alatna River area of exploitation was used exclusively by Inupiat or by Athapaskans who were accompanied by them.

Spring. In April, as the days became longer and brighter, there was a feeling of warmth in the air (Fig. 2.4). Small family and household groups, who had lived and worked together during the winter, packed their gear on their sleds and moved from their semisubterranean houses to spring camps where they lived in skin (later cloth) tentage or brush huts. Usually two families camped together. Sometimes, however, they joined with other families and formed a larger unit. Men and women concentrated on trapping beaver, shooting and trapping muskrats, and fishing. For some this camp ended a lean period, especially if only a few caribou had been killed on their migration northward.

When people went to spring camp there was still snow on the ground. They travelled on snowshoes and pulled their household belongings with them on their sleds. During late precontact times dog teams were exceptionally small, and freight sleds usually were pulled by only two or three dogs assisted by family members. While they were at spring camp the snow melted and the landscape changed rapidly under the increasing hours of sunshine. They left this camp by boat. In May and early June (Fig. 2.5), families usually moved to spring fishing camps located near their rat camps. If the location was good, it was not necessary to move again to continue spring activities. Men repaired their basket-type fish traps, cached the previous year, and set them in streams near lake outlets. Whitefish were taken in abundance, along with pike and other types of fish, but the salmon were yet to come. Women usually fished with willow bast nets. These were made in two sizes: a large gauge one for pike and a smaller one for "herring" and suckers.

By this time migratory water fowl had arrived from the south. In traditional times men hunted them with bows and arrows, but after contact they were killed with charges of shot. During spring, as well as at other times, hunters killed large game, especially bears that had just emerged from hibernation. The Koyukuk and its tributaries break up, i.e., the ice goes out, during middle to late May -- never as late as June and rarely as early as the end of April -- but people usually did not leave spring camp immediately after breakup because of the swollen stage of the Koyukuk.

Summer. About June 10, after hunters who had been out and returned to camp, families once again packed their paraphernalia and supplies, cached equipment that would not be needed at the next camp, and descended the tributaries to their confluence with the Koyukuk (Fig. 2.5). Frequently several families met at special meeting points before going on to their salmon camps. Others preferred to stay at their camps on the tributaries a few weeks longer to fish and hunt birds. By early July almost all families had moved to fish camps on or near the Koyukuk (Fig. 2.6). There several families usually worked together at the same camp. Summer fishing was primarily for salmon, but other fish also were caught. Basket-trap salmon fishing, the method of choice in the main river, was a group enterprise. Trap fishing was used during the period when the house sites reported in this paper were occupied and continued to be popular until the 1940's when they were abandoned. Since then, the summer fishery has relied almost exclusively on nets. When traps were used, a number of men under the leadership of a "boss" installed the large, elongate, basket-type salmon traps at suitable places along the Koyukuk River and the lower reaches of its major tributaries (see Pl. 17).

With the arrival of the first salmon in the Kanuti-Alatna region of the Koyukuk, which was usually during the first week of July, but earlier downriver and slightly later on the South Fork, the women spent a large part of their time cutting and drying fish for the coming autumn and winter. When it was possible, even in the era of the trap fishery, the men left to continue hunting, especially late in August. Nevertheless, there was always the chance that high water would necessitate removal of the traps to keep them from being swept away. If the salmon run was very light, traps were installed on the tributary streams, e.g., one and a half miles up the Kanuti River, to take descending whitefish, suckers, grayling, pike and the occasional loche.

Late in August (Fig.2.7), men reassembled to go on extended hunting trips to the hinterlands up the Kanuti, South Fork, Alatna and John Rivers. Soon after contact some forays were inter-ethnic, i.e., Athapaskans accompanied Inupiat on hunting trips up the John and Alatna rivers, and conversely, Inupiat accompanied Athapaskans to the Kanuti and South Fork.

Autumn and early winter. When the men returned around mid-September the families almost immediately went to a fall camp (Fig. 2.8), usually situated away from the Koyukuk River at a lake outlet or on an outlet stream. Basket traps were set for small whitefish and grayling. While the women and children tended the traps, hunted and snared small game near their camps, the men went out on short trips to hunt bear and other game, such as moose. There were now sharp frosts at night, and about this time of the year the families moved into their semisubterranean winter houses (*naklukno*), which often were built only a short distance from their fall camps. These small winter villages contained from one to three semisubterranean houses, each of which usually was occupied by two families. In October temperatures dropped well below zero degrees F., and between the middle and end of the month the main rivers froze.

In late October the caribou arrived from the north (Fig. 2.9), and people intercepted the migration as the animals passed through. Several men, together with other family members, went to the hills to the south and east to look for them or to tend the caribou fences. The period just prior to direct conjunction, to which the houses in this study relate, is coincident with the beginning of a period of scarcity and decline in game, and it probably was almost fruitless to go out looking for caribou or moose. At this time, black bear were sought in their dens. For premenopausal Indian women, who were not allowed to eat bear meat, this was reputed to have been a time of starvation.

During the rest of the dark days, hunting large game and fur trapping continued, but with less concerted effort than before (Fig. 2.10). Women and children set snares for hare and ptarmigan, and thus each ablebodied person participated in the food quest. At this time, they also fished through the ice with fish spears and lures, hooks, and with traps. Nets also were set through or under the ice. Fishing continued until the ice grew so thick that it became impractical, or until most fish had left for the deeper waters of large rivers.

Winter. When the shortest days of winter arrived there was little hunting, trapping and fishing (Fig. 2.11). During this period the Koyukon held their winter solstice festivals. If the preceding season had been good and there was enough food, this was a time for gaiety. In lean years, the Koyukuk had to forgo their winter gatherings and remained in their semisubterranean houses.

Late winter and early spring. Late in January, or during February, most members of the family left their winter village and went on extended hunting-foraging-trapping circuits (Figs. 2.12, 2.13). Some old people stayed in the winter villages to subsist on any food available. This often was an especially lean time of the year. On the winter circuit, several families from a band usually travelled and camped together (Chief Henry 1979). In the daytime the men went their separate ways hunting hare, porcupine, spruce grouse, and caribou and moose, if any could be located. They kept moving and camped at a new place every few nights. If a moose were killed, they stayed in the same place for several days. When food was scarce, the men hunted and the women looked for blackfish

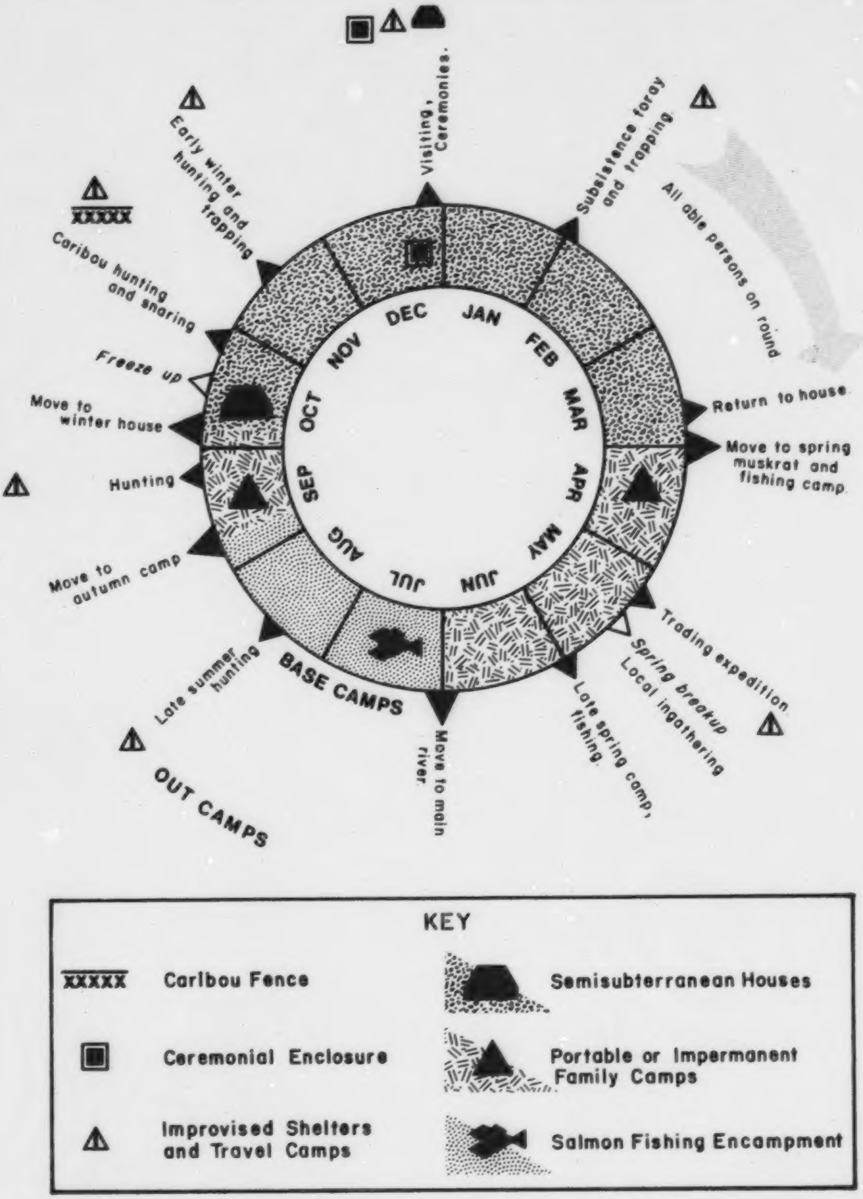

Visiting, Ceremonies.
Subsistence foray and trapping
All able persons on round
Return to house
Move to spring muskrat and fishing camp
Trading expedition
Spring breakup
Local ingathering
Late spring camp, fishing
Move to main river
BASE CAMPS
Late summer hunting
OUT CAMPS
Move to autumn camp
Hunting
Move to winter house
Freeze up
Caribou hunting and snaring
Early winter hunting and trapping
XXXXX
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
KEY
XXXXX Caribou Fence
Ceremonial Enclosure
Improvised Shelters and Travel Camps
Semisubterranean Houses
Portable or Impermanent Family Camps
Salmon Fishing Encampment

Fig. 2.3. Annual Subsistence Cycle Model: Lake Creek and Lower Alatna River.

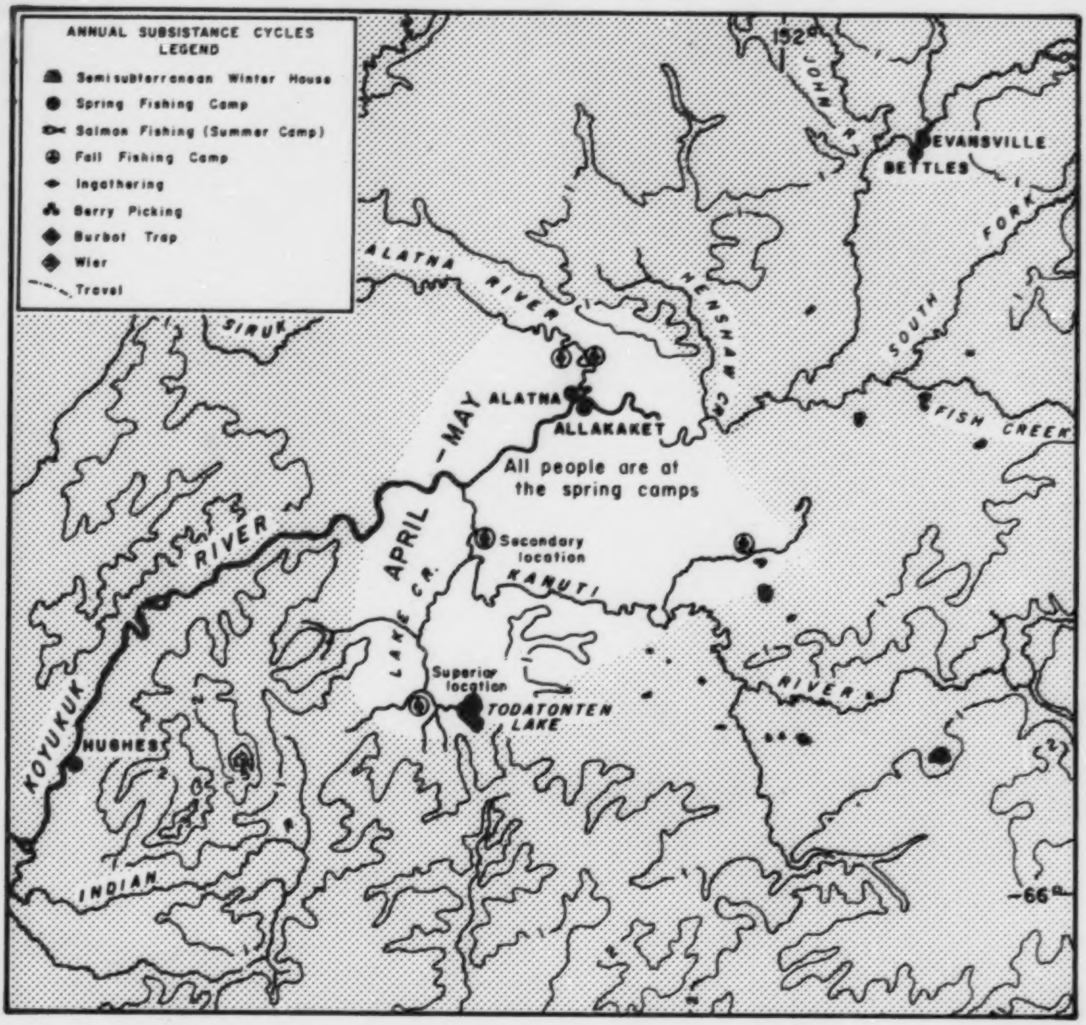

ANNUAL SUBSISTANCE CYCLES
LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel
152°
JOHN R.
EVANSVILLE
BETTLES
SOUTH FORK
ALATNA RIVER
HENSHAW CR.
SIRUK
ALATNA
ALLAKAKET
APRIL - MAY
All people are at the spring camps
FISH CREEK
KOYUKUK RIVER
Secondary location
KANUTI RIVER
LAKE CR.
Superior location
TODATONTEN LAKE
HUGHES
INDIAN
66°

Fig. 2.4. Spring camp: April until breakup in May. Camps illustrated are those closest to winter house sites. Additional camps are located within the map area. Alatna River use area overlaps with that of Inupiat.

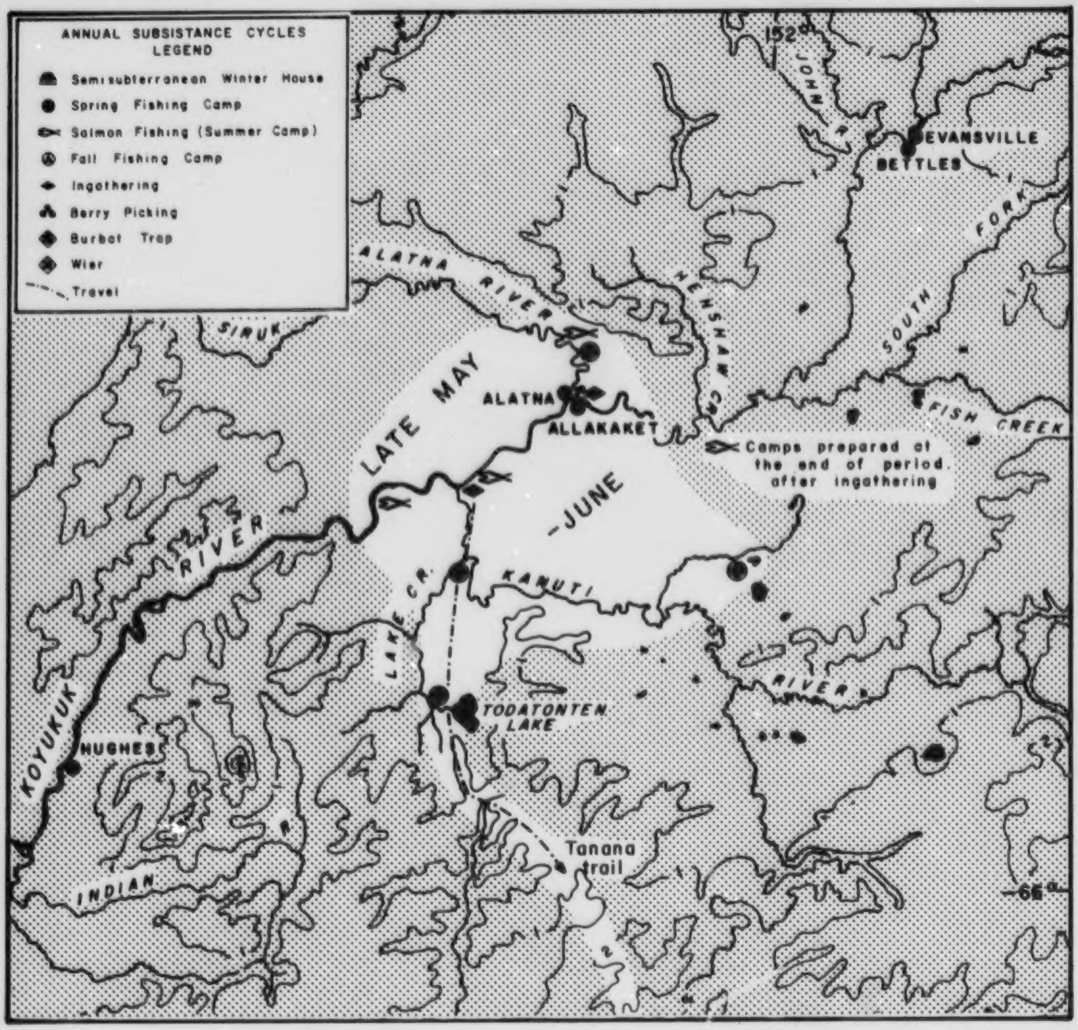

ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel
152°
JOHN R.
EVANSVILLE
BETTLES
SOUTH FORK
ALATNA RIVER
HENSHAW CR.
SIRUK
LATE MAY
ALATNA
ALLAKAKET
FISH CREEK
Camps prepared at the end of period, after ingathering
-JUNE
RIVER
KANUTI
RIVER
LAKE CR.
TODATONTEN LAKE
KOYUKUK
HUGHES
INDIAN
Tanana trail
66°

Fig. 2.5. Spring Fish Camps: Late May and early June. A variety of activities and options could be followed during the period after breakup and before the salmon arrived. Either the preceding spring camps or other late spring fishing sites might be occupied. Summer trails followed high ground, thus differing from winter trails. Alatna River use area overlaps with that of Inupiat.

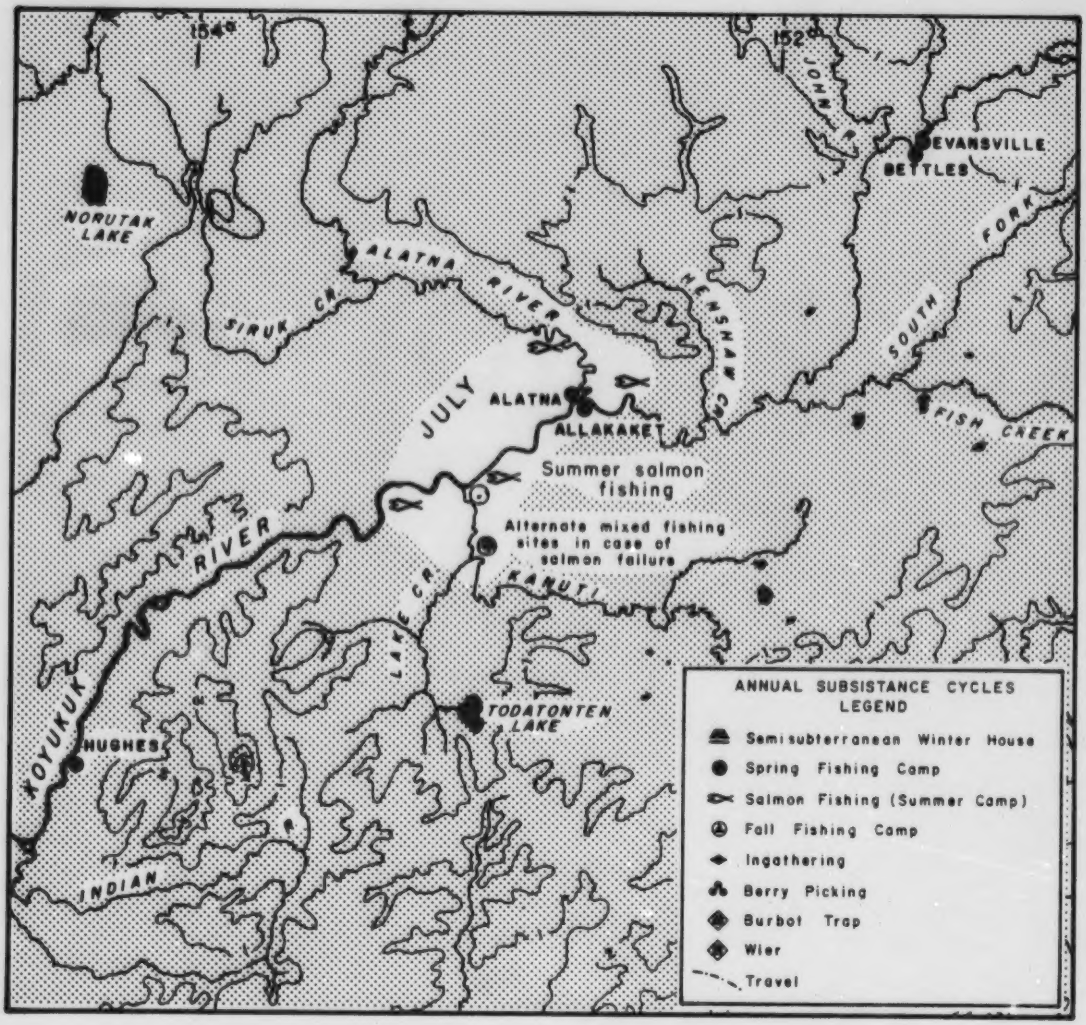

154°
152°
NORUTAK LAKE
ALATNA RIVER
SIRUK CR.
JOHN R.
EVANSVILLE
BETTLES
SOUTH FORK
HENSHAW CR.
FISH CREEK
JULY
ALATNA
ALLAKAKET
Summer salmon fishing
Alternate mixed fishing sites in case of salmon failure
KANUTI
LAKE CR.
RIVER
KOYUKUK
HUGHES
TODATONTEN LAKE
INDIAN
ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel

Fig. 2.6. Summer Fish Camps: July. Salmon did not arrive in large numbers until mid-July, but it was necessary to set up the camps and equipment earlier. Suckers, whitefish and pike were also caught at this time. If the salmon run failed, traps were set on the Kanuti to take lesser species. Alatna River use area overlaps with that of Inupiat.

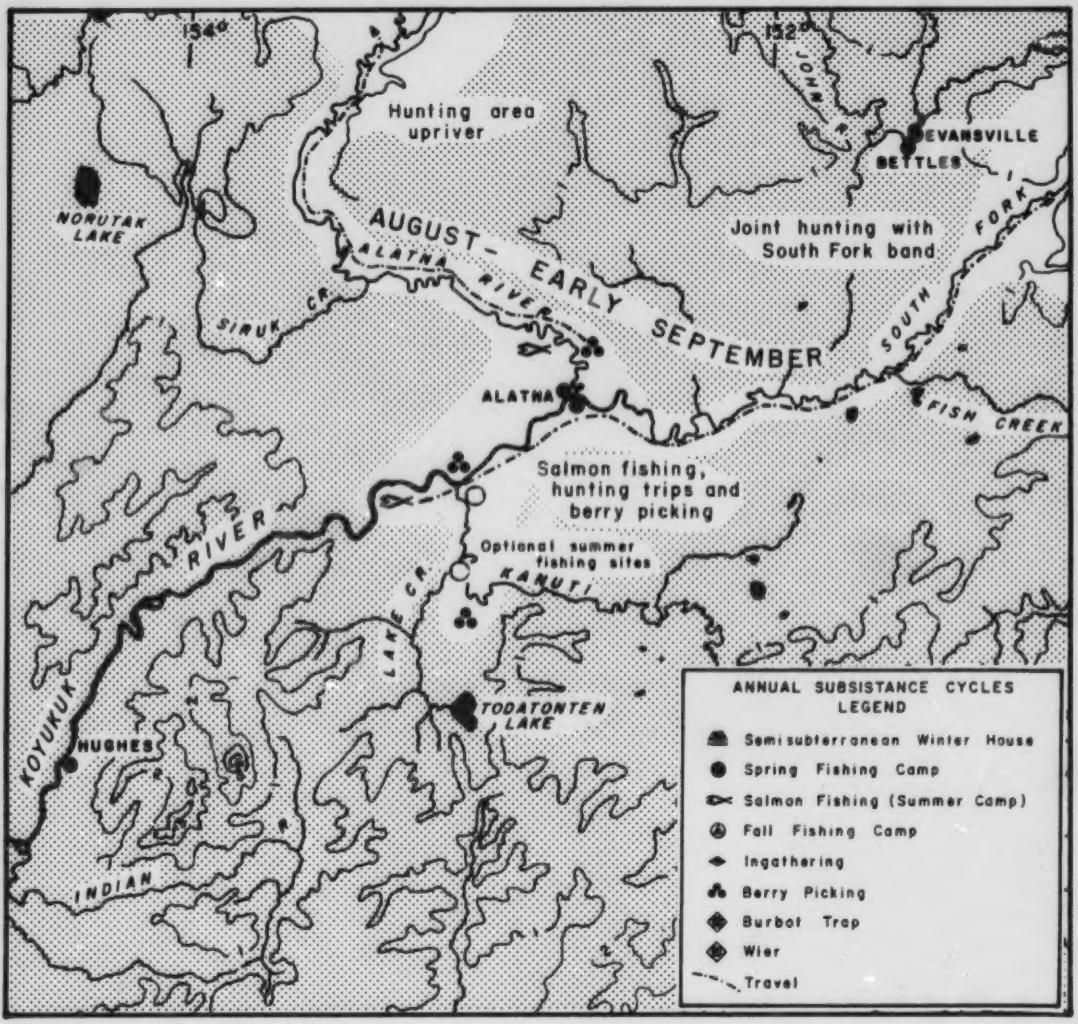

154°
152°
JOHN R.
EVANSVILLE
BETTLES
Hunting area upriver
NORUTAK LAKE
AUGUST- EARLY SEPTEMBER
ALATNA RIVER
Joint hunting with South Fork band
SOUTH FORK
SIRUK CR.
ALATNA
FISH CREEK
Salmon fishing, hunting trips and berry picking
Optional summer fishing sites
KANUTI
LAKE CR.
KOYUKUK RIVER
TODATONTEN LAKE
HUGHES
INDIAN
ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel

Fig. 2.7. Late Summer activities. Some men and women continued to operate the fishery, while others went on late summer hunting trips. Joint hunting with members from the South Fork Band was one of the hunting options. Alatna River use area overlaps with that of Inupiat.

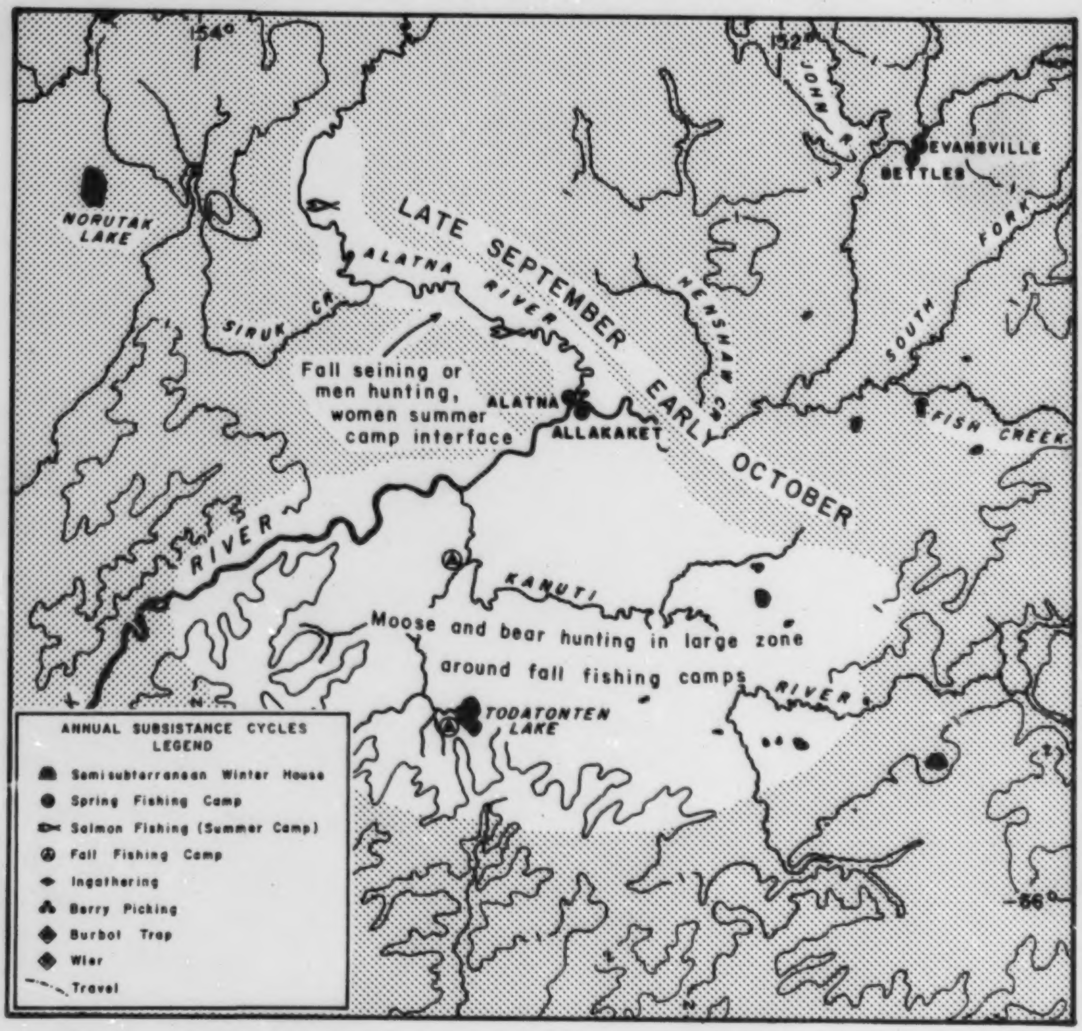

154°
152°
JOHN R.
EVANSVILLE
BETTLES
NORUTAK LAKE
LATE SEPTEMBER
EARLY OCTOBER
ALATNA RIVER
SIRUK CR.
HENSHAW CR.
SOUTH FORK
FISH CREEK
Fall seining or men hunting, women summer camp interface
ALATNA
ALLAKAKET
RIVER
KANUTI RIVER
Moose and bear hunting in large zone around fall fishing camps
TODATONTEN LAKE
66°
ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel

Fig. 2.8. Early Autumn activities: Mid-September through Mid-October. Fall fishing for whitefish and grayling from camps on secondary and tertiary streams terminated with hard freezing. During one period, c. 1885-1925, moose were not available in the local area. For some people early autumn was not a distinct subset of activities, but only a continuation of previous ones and initiation of new activities. Alatna River use area overlaps with that of Inupiat.

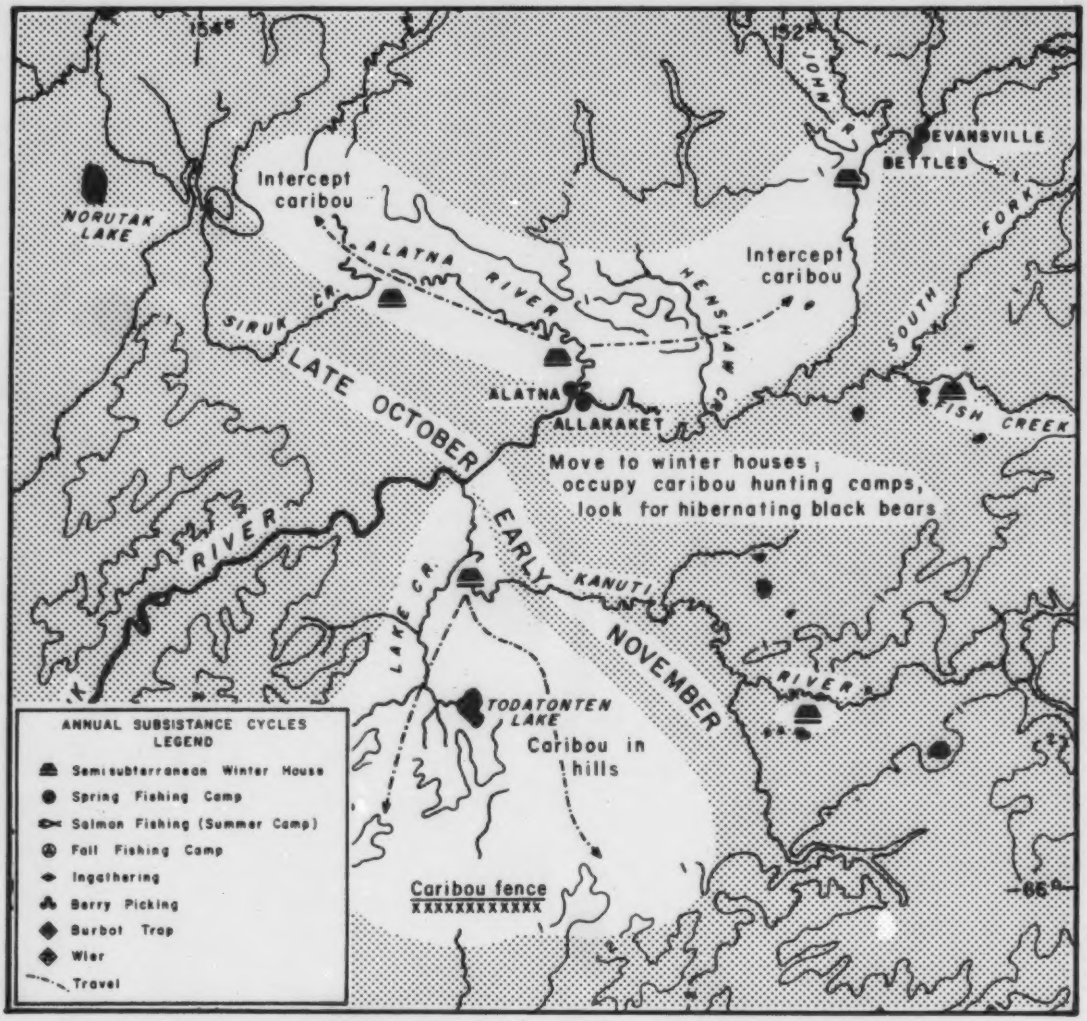

154°
152°
NORUTAK LAKE
Intercept caribou
ALATNA RIVER
SIRUK CR.
JOHN R.
EVANSVILLE
BETTLES
SOUTH FORK
Intercept caribou
HENSHAW CR.
ALATNA
ALLAKAKET
FISH CREEK
LATE OCTOBER
Move to winter houses; occupy caribou hunting camps, look for hibernating black bears
RIVER
LAKE CR.
EARLY
KANUTI
NOVEMBER
RIVER
TODATONTEN LAKE
Caribou in hills
Caribou fence
XXXXXXXXXXX
66°
ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel

Fig. 2.9. October-November activities. The availability of caribou and whether they are migrating or occupying winter range depends upon the particular area and period in history under consideration. On the winter range caribou continued to be available for several more months and some were present throughout the year. The people who owned the fence shown probably lived close to the fence. In addition to the lower Alatna and Lake Creek houses, other settlements are shown. Alatna River use area overlaps with that of the Inupiat.

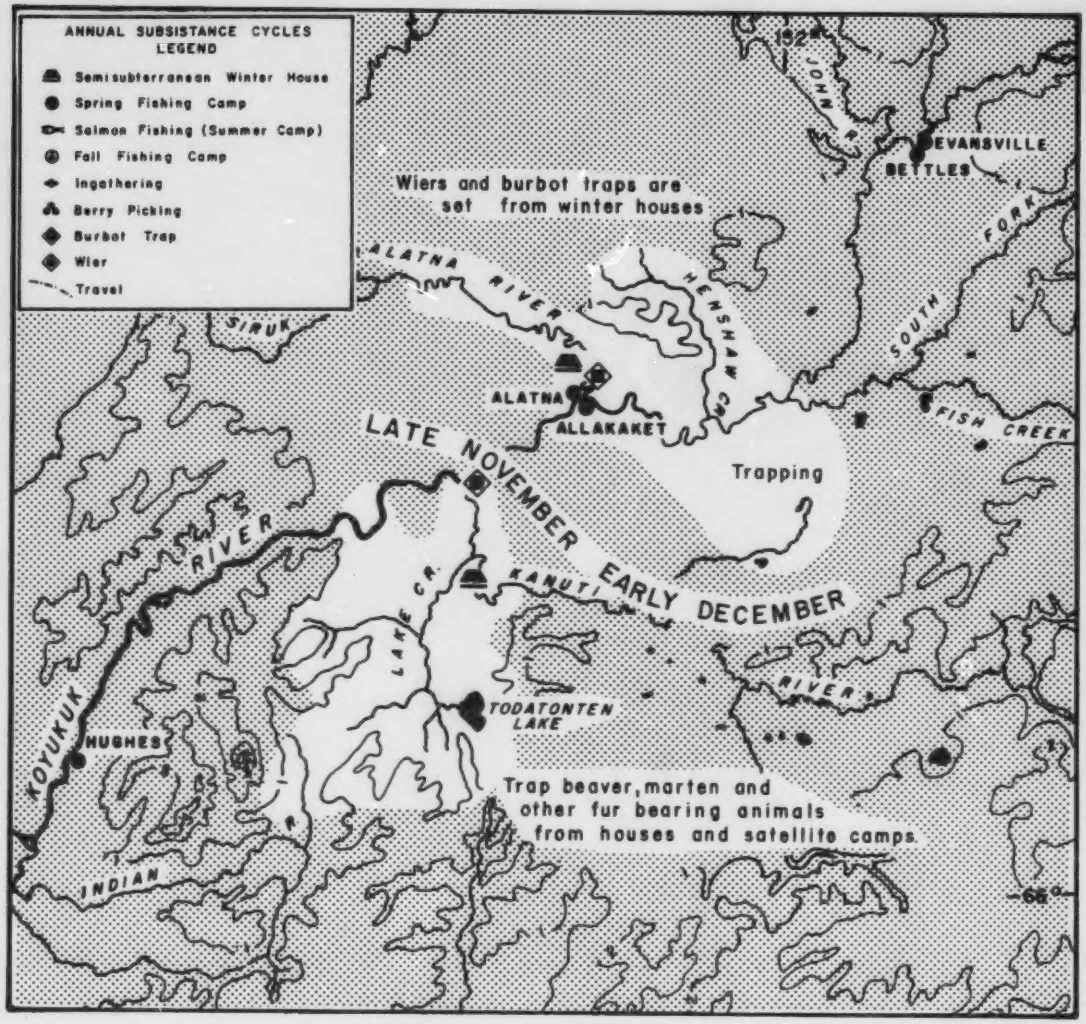

ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel
Wiers and burbot traps are set from winter houses
ALATNA RIVER
HENSHAW CR.
JOHN R.
152°
EVANSVILLE
BETTLES
SOUTH FORK
FISH CREEK
SIRUK
ALATNA
ALLAKAKET
LATE NOVEMBER EARLY DECEMBER
Trapping
RIVER
KANUTI
LAKE CR.
TODATONTEN LAKE
RIVER
KOYUKUK
HUGHES
Trap beaver, marten and other fur bearing animals from houses and satellite camps.
INDIAN
66°

Fig. 2.10. November-December activities. Locations of the weirs and burbot traps are hypothetical. For beaver-marten trapping, the Lake Creek drainage is indicated for the Lake Creek site, although other trapping area could be reached from that locality. The area indicated for the lower Alatna sites is an open ended zone of fur-bearer habitat. Alatna River use area overlaps with that of the Inupiat.

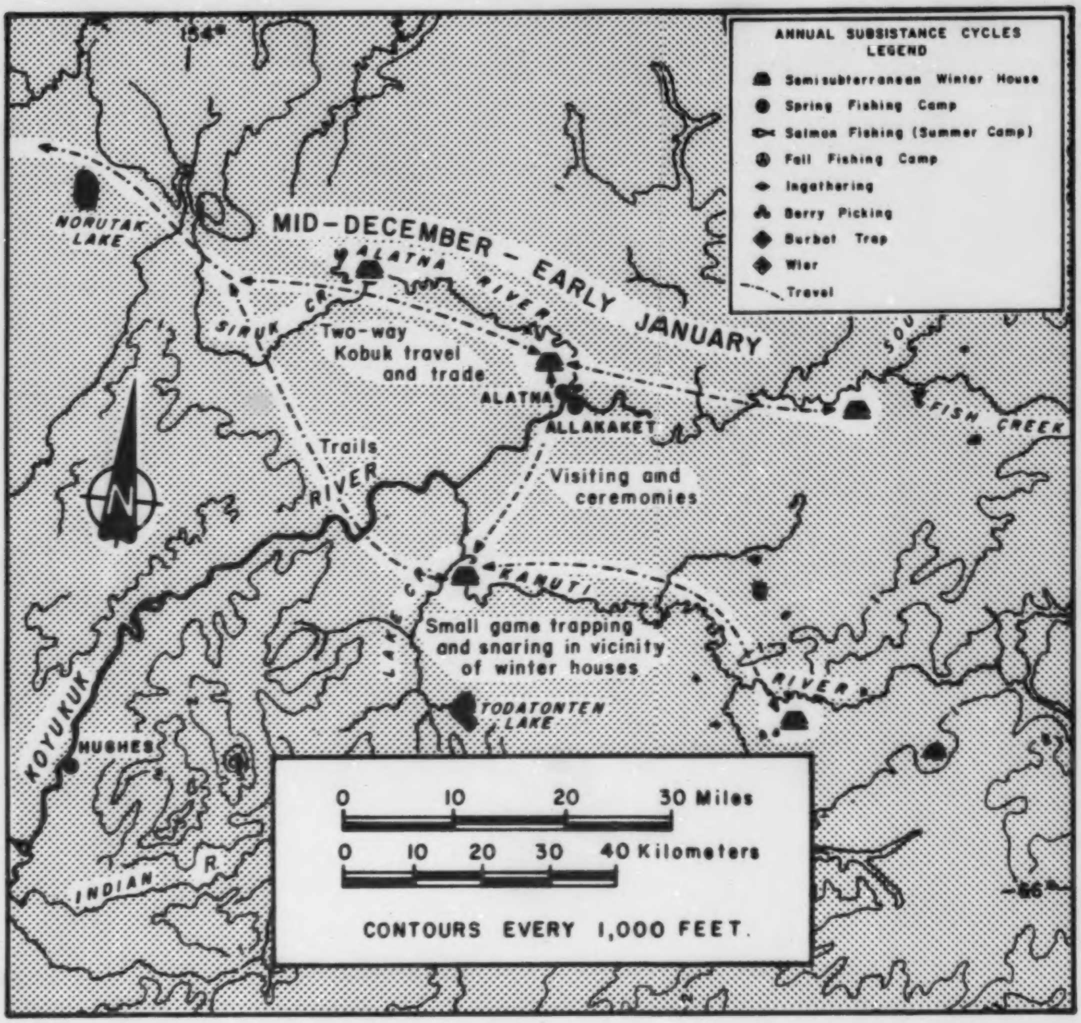

154°
NORUTAK LAKE
MID-DECEMBER – EARLY JANUARY
ALATNA RIVER
SIRUK CR.
Two-way Kobuk travel and trade
ALATNA
ALLAKAKET
Trails
RIVER
Visiting and ceremonies
SOU
FISH CREEK
N
KANUTI
LAKE CR.
Small game trapping and snaring in vicinity of winter houses
RIVER
TODATONTEN LAKE
KOYUKUK
HUGHES
INDIAN R.
66°
ANNUAL SUBSISTANCE CYCLES LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel
0 10 20 30 Miles
0 10 20 30 40 Kilometers
CONTOURS EVERY 1,000 FEET.

Fig. 2.11. Mid-December through early January activities. The winter solstice period was a time of festivities, visiting and trade. Lines of interaction between localities are illustrated. Note travel to Kobuk.

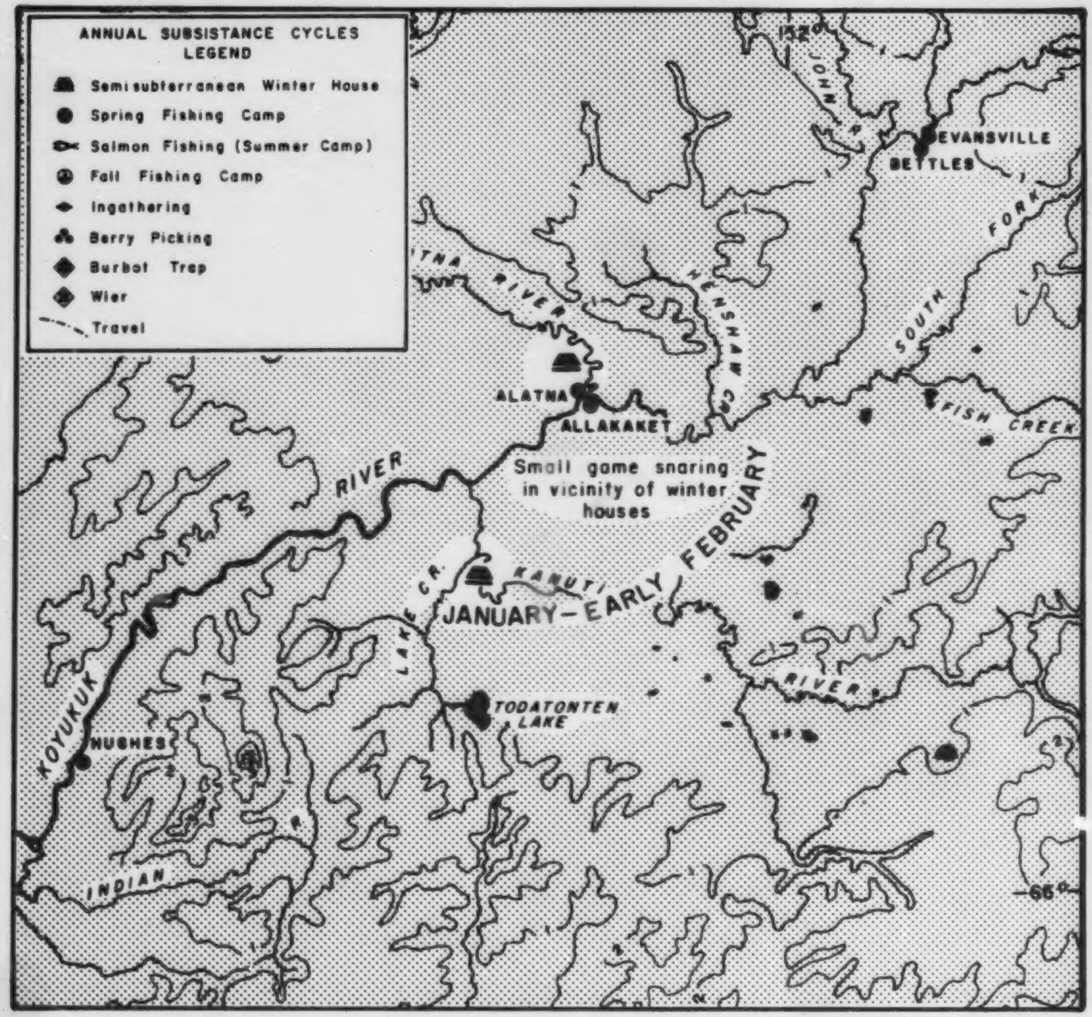

ANNUAL SUBSISTANCE CYCLES
LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel
152°
JOHN R.
EVANSVILLE
BETTLES
SOUTH FORK
FISH CREEK
HENSHAW CR.
TNA RIVER
ALATNA
ALLAKAKET
RIVER
Small game snaring in vicinity of winter houses
JANUARY—EARLY FEBRUARY
KANUTI
LAKE CR.
RIVER
TODATONTEN LAKE
KOYUKUK
HUGHES
INDIAN
66°

Fig. 2.12. January-Early February activities. This was the least active part of the year, and big game was usually scarce.

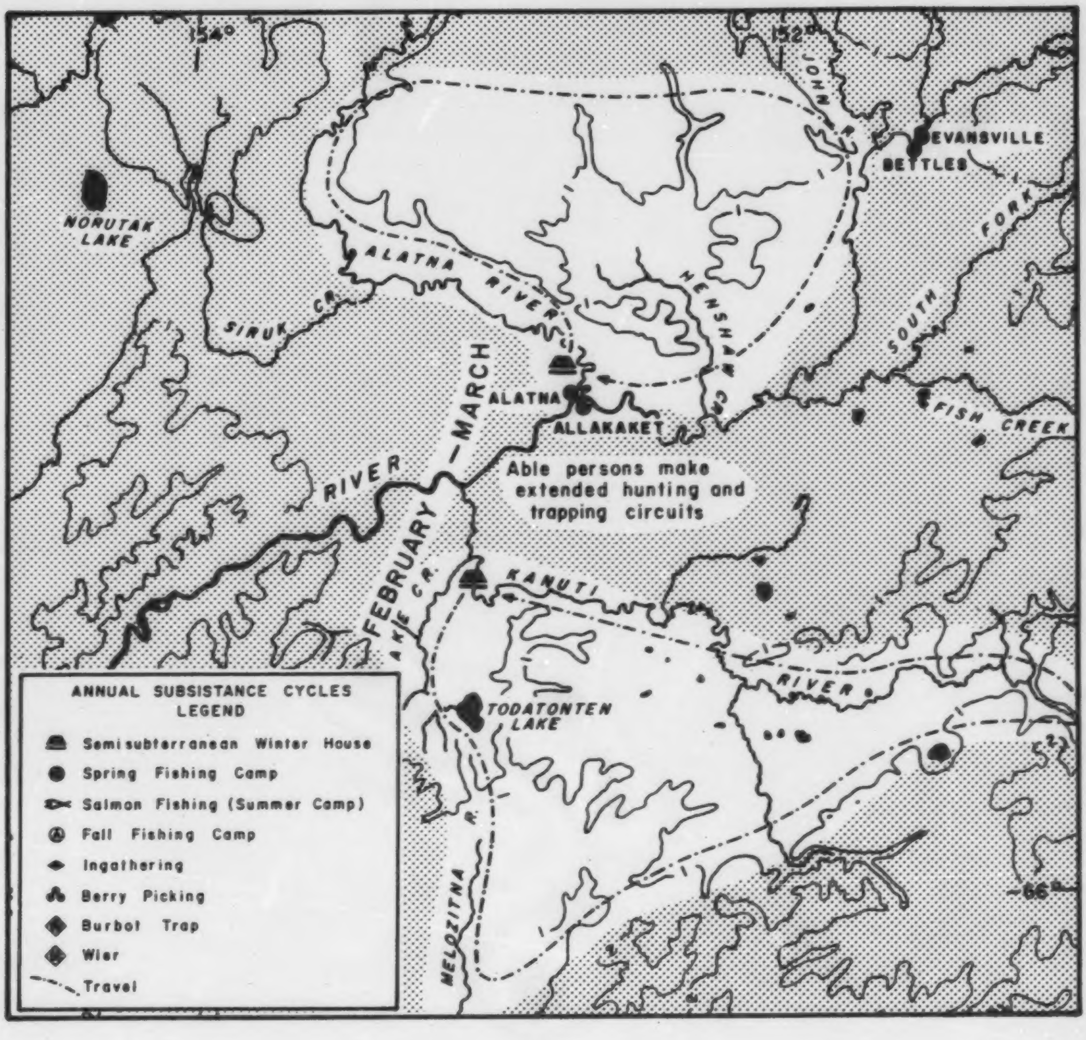

154°
152°
JOHN R.
EVANSVILLE
BETTLES
NORUTAK LAKE
ALATNA RIVER
SIRUK CR.
HENSHAW CR.
SOUTH FORK
FISH CREEK
ALATNA
ALLAKAKET
FEBRUARY—MARCH
RIVER
Able persons make extended hunting and trapping circuits
KANUTI RIVER
LAKE CR.
TODATONTEN LAKE
MELOZITNA R.
66°
ANNUAL SUBSISTANCE CYCLES
LEGEND
Semisubterranean Winter House
Spring Fishing Camp
Salmon Fishing (Summer Camp)
Fall Fishing Camp
Ingathering
Berry Picking
Burbot Trap
Wier
Travel

Fig. 2.13. February-March activities. Circuits illustrated are schematic. Frequently the return route was coincident with the out-going route. Alatna River use area overlaps with that of Inupiat. By 1900 the Alatna Range was used almost exclusively by Inupiat, or by Athapaskans who were in the company of local Inupiat.

breathing holes at lakes in boggy areas. When holes were found, they set splint traps in the ice where schools of these small fish congregated. Then, about the first of April (Fig. 2.13), or when they obtained enough meat, they went back to their winter houses. Soon after that they left for spring camp.

Material Culture. The Koyukon share many material traits in common with other local Athapaskans and with neighboring Inupiat (McFadyen Clark 1974). Most of their manufactured items were fashioned from bone, stone, wood, birchbark, caribou and moose hides, and caribou fawn skins. Sinew was used for sewing clothing and tentage; and spruce root was used for stitching bark on house roofs and canoes and for fabricating containers. Along the middle and upper Koyukuk fish nets were made from willow bast, but down river near the Yukon sinew and fine babiche were also used. In precontact times, like their Inupiat neighbors, the Koyukuk Athapaskans made pottery, a feature that distinguished them from most other interior Northern Athapaskans (McFadyen Clark 1981). Most all objects were made from local raw materials by the users or members of their families, and only a few items were obtained in trade.

Clothing. Special occasion clothing featured double V-tailed caribou-skin shirts and single-piece trouser-moccasins, depilatated for summer and with hair left on and turned inside for winter. This costume -- with matching mittens and cap, frequently exquisitely decorated with dyed porcupine quill, plant seeds, red paint along the seams, dentalia, and fine fringe -- was worn especially when a person attended feasts, visited other encampments, or went trading. A less ornate caribou-skin pullover shirt, usually with hood attached, had straight hems and was cut longer for women than for men. Trouser-moccasins were also worn with these. Ornate clothing similar to that worn by the Inupiat about Kotzebue Sound was also used, as were caribou-skin mukluks with moose-hide soles (McFadyen Clark 1981). Babies and young children usually were dressed in closed-sleeve rabbit-skin parkas with moccasin-trousers, while older children wore adult-style clothing.

Structures. Many types of shelter were made that were similar to other northwestern Athapaskans and their Inupiat neighbors, e.g., their semisubterranean houses described in this paper were almost identical to those of the Kobuk Inupiat.

Transportation. In addition to birchbark and skin boats and the ubiquitous snowshoes, dog traction, used in conjunction with built-up double-ended sleds, was in use at the time of conjunction. Teams were very small and usually consisted of one to three dogs, a half-grown child or two, and sometimes a wife -- a picture that again parallels the Inupiat (McFadyen Clark 1974; 1981).

Additional information on Koyukuk River Koyukon Athapaskan material culture is discussed in McFadyen 1966 and McFadyen Clark 1974 and 1981.

CHAPTER 3
THREE WINTER VILLAGE SITES

Village Site Descriptions

Until direct conjunction in 1884-85, Koyukuk drainage Athapaskans and Inupiat lived in small villages of semisubterranean houses during the coldest periods of the year when they were not out on the hunting circuit. In the middle and upper regions of the drainage, winter villages usually consisted of two houses, each customarily occupied by at least two families, although some settlements consisted of only a single house and at others there were three (McFadyen Clark and D. Clark 1974). From the Huslia-Dalbi area southward to the Yukon, precontact villages were larger (Allen 1887). According to Athapaskan and Inupiat oral tradition collected from Koyukuk residents between 1961 and 1972, the semisubterranean houses constructed by both ethnic groups were similar.

In this chapter I shall first describe the house sites excavated in 1968 (Table 3.1); and, following their description, present an overview of the micro-environments for the sites. The chapter ends with a discussion of oral tradition and ethnohistory relevant to both the house sites and their possible inhabitants.

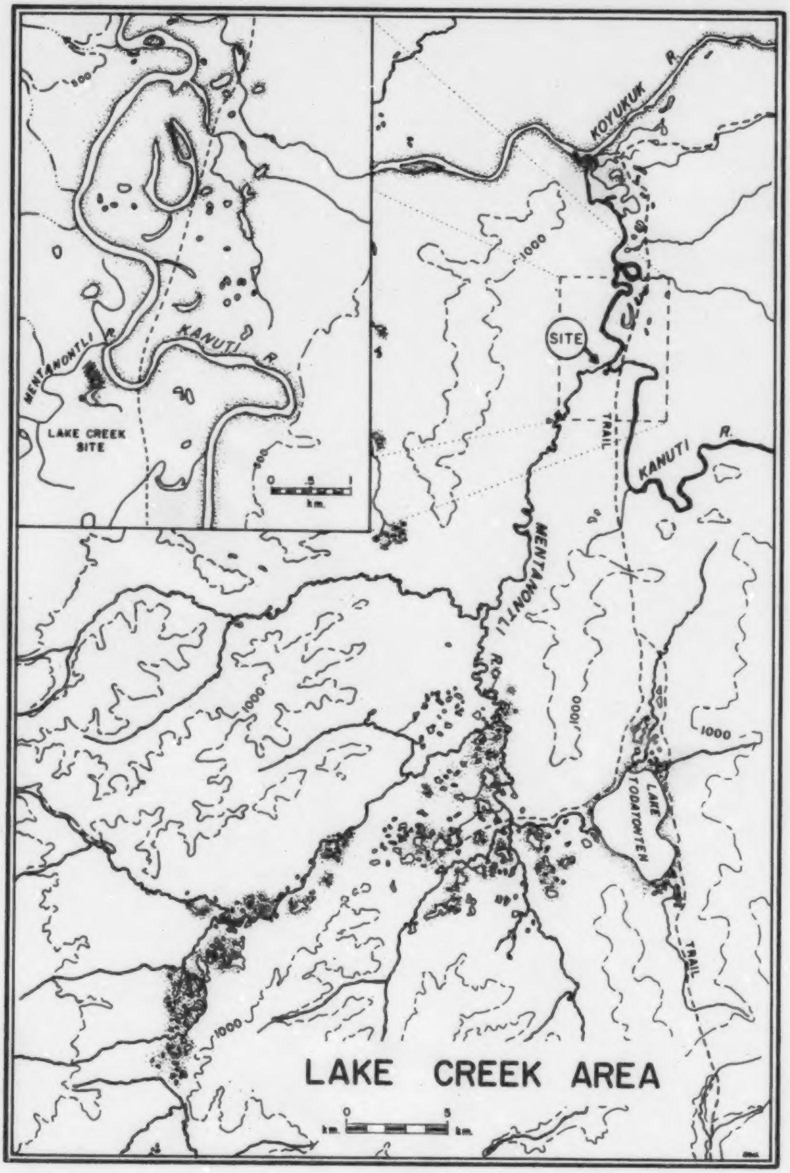
Lake Creek Site

I think that the Lake Creek site is the winter component of "Kenootena," the location of direct historic conjunction in 1884-85. Lake Creek is described first, both for historical reasons and also because it was the first site I visited in 1961, although it was the last one excavated. This two-house village site is located at the edge of a small horseshoe lake, a few hundred yards east of the confluence of Lake Creek and the Kanuti River (Fig. 3.1). The lake was left by a former meanderof either Lake Creek or the Kanuti, probably the latter (Pl. 10). At this site, the houses are spaced 11 metres apart

TABLE 3.1. DESIGNATIONS OF EXCAVATED HOUSE SITES

Name	Mnemonic	ASC No.*	Alaska Heritage	Other
Lake Creek	Lake Creek	ScIc-1	BET 034	Contact site
Kayak	Oscar's site	SdIb-1	BET 031	Koyukuk Alatna site
Okak	Jimmy's site	SdIb-2	BET 032	Lower Alatna site

*Records and specimens at the Canadian Museum of Civilization are listed and catalogued under this "Borden System" designation.



KANUTI R.
MENTANONTLI R.
LAKE CREEK SITE
500
0 .5 1
km.
KOYUKUK R.
SITE
1000
TRAIL
KANUTI R.
MENTANONTLI R.
LAKE TODATONTEN
LAKE CREEK AREA
0 5
km. km.

Fig. 3.1. Map of Lake Creek (Mentanontli) and adjacent Kanuti River.

on the edge of the bank and face south, away from the river. The Kanuti River (from *Kanutna* meaning "fish eggs river," e.g., one in which fish spawn) is known locally also as the "Old Man." Similarly, "Lake Creek" is local usage for Mentanontli River, as it is designated on topographic sheets and which closely approximates its Koyukon name. Most adults living in Allakaket in the 1960's and 1970's were aware that the old village existed, although some only by hearsay and their statements might lead one to believe that it was older and larger than it was found to be. The mouth of Lake Creek has figured prominently within recent generations as an early fall fishing site and central base for subsistence activities for several families whose descendants now live at Allakaket, Hughes and Huslia. These families, however, were for the most part ones which had moved up from the Huslia-Dalbi band area in the 1890s and were not members of the original Todatonten-Kanuti band. At least one family, the Koyukuk-Oldman family, is, however, believed to have been a part of the original band.

E. B., Sr., took me to see the site in 1961, and at the same time he showed me the fishing location, traps and weir section (Pl. 12) that he and his family had used until about 1950. E. said that the slumped-in houses looked almost the same in 1961 as they had about 1915 when his grandfather, Chief Moses, showed them to him and told him, in effect, "this is where the old people lived; the people who lived here before we came."

In 1968, House 1 of this 2-house village site was completely excavated, except for the tunnel which contained a mass of ice. Once the sod and the roots from trees and saplings were removed from the housepit, it was relatively easy to remove the sand and silt which had been intentionally piled over the structure during construction to insulate the house. The side walls had not collapsed, although the ends had, and the birchbark sheets covering the roof were largely intact. Here, as elsewhere, the central area was a jumble of timbers and protruding birchbark that was caused by the collapse and inherent complexity of the structure (Pl. 11A).

There was a tiny pit lined with cobbles in front of the two houses, but no other surface features were seen at the site. More recent features in this area are located several hundred meters away on the banks of the present-day location of Lake Creek.

The variety and nature of trade goods found in the Lake Creek house suggest that it may have been occupied slightly later than the Kayak and Okak houses. This is the only site at which fabric, a ceramic sherd, a manufactured leather item, a pocket knife, a metal file (the crooked knife at the Okak site may be made from a file), and a spoon were found.

The Kayak Site

This housepit site is located near the edge of a slightly elevated alluvial terrace on the south side of the Alatna River, one-third mile above its confluence with the present-day Koyukuk River (Fig. 3.2; Pl. 14B). The ground on which the site is located bends away from the present river and faces a depressed area, apparently a former slough, two to three feet lower in elevation, that leads into Horseshoe Lake. One or possibly both house tunnels face away from the course of the present river and towards this swale. Within the memory of several persons living in the area, there have been several minor changes in the course of both the Alatna and Koyukuk rivers. It appears as if the houses

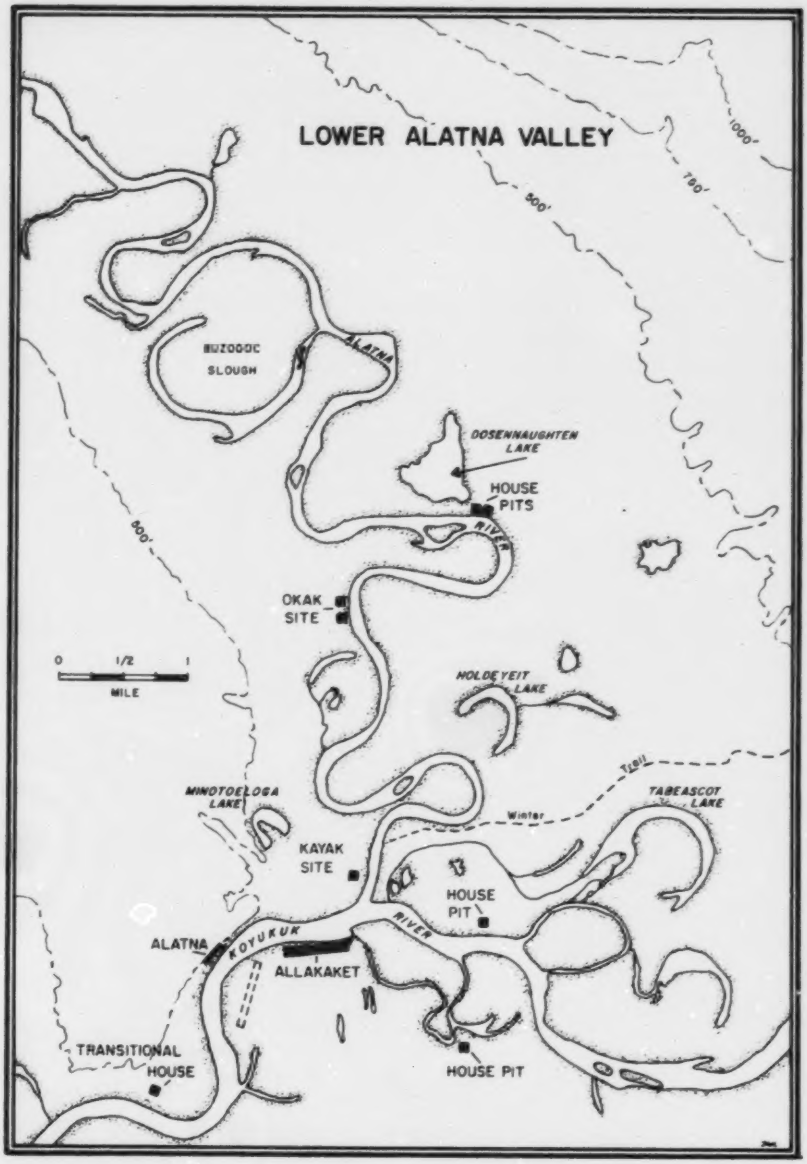

LOWER ALATNA VALLEY
1000'
700'
800'
BUZOOOC
SLOUGH
ALATNA
DOSENNAUGHTEN
LAKE
HOUSE
PITS
RIVER
600'
OKAK
SITE
0
1/2
1
MILE
HOLDEYEIT
LAKE
Trail
Winter
TABEASCOT
LAKE
MINOTOELOGA
LAKE
KAYAK
SITE
HOUSE
PIT
ALATNA
KOYUKUK
RIVER
ALLAKAKET
TRANSITIONAL
HOUSE
HOUSE PIT

Fig. 3.2. Map of the lower Alatna valley, showing the location of the Kayak, Okak and other sites.

were located in reference towards a former slough or earlier course of one of these rivers.

No trace of occupation was observed in the silts of the cut river bank near the site. The first indication of the site, about 50 feet back from the river bank, was the exposed, broken base of a small mammoth tusk. It apparently had been placed upright and was securely locked into the ground by roots of two recently cut (in 1968) 90-to 100-year-old spruce trees. Cutting marks were observed on the few inches of tusk exposed. An occurrence of this kind cannot be considered unusual for northern Alaska (cf. Giddings 1952:64, 69, 79), and it was not believed that the task of removing the stumps in order to retrieve it was warranted. However, in 1970 fire fighters cut away the root matrix and attempted to remove the tusk, but it fell apart. The trees could not have been very old when the tusk was placed there. Possibly it was brought into the site before 1890 or 1900, although this is not necessarily related to occupation of the house. Two rectangular pits, slightly more than one meter long and half as wide, and a possible house tunnel, are located 100-150 feet back from the bank, following the angled trend of the terrain. There is localized willow growth, but no pronounced depression at the end of the possible house tunnel. None of these features was tested. The only distinct house ruin was found 400 feet back from the present bank. It was outlined by a distinctive rectangular pit and a tunnel or entry filled with a dense growth of willow and spruce saplings. Small cottonwood poplars grew about the rim. This house was completely excavated except for part of the tunnel which did not thaw during the summer.

O.N., Sr., an Inupiat from Alatna, had reported the site to me in 1961, but I was unable to locate it. Later in 1968 after one unsuccessful attempt to find the site, O.N. led us to it. He attributed the site to the semi-legendary Koyukuk Indian, Rabbit Medicine Man. When excavation was initiated, I thought that it might be of relative antiquity since the Indians at Allakaket had forgotten about the site. But, as the first Euroamerican trade items were excavated, the people at Allakaket began to recall stories about the settlement. The presence of .44 calibre rimfire cartridges and certain other artifacts indicated a late 19th century age.

Our crew was prepared for the usual paucity of artifacts in northern Athapaskan house ruins and therefore interest was directed towards recovery of structural details. Moss, litter and a large volume of spruce nuts cached by red squirrels were carried out of the pit. Considerable time was spent attempting to carefully uncover rotted timbers, poles and birch bark found just beneath and in the moss before it was realized that most of the structure lay relatively well preserved under several centimeters of silt and sand. The house had not escaped flooding and silting, although some of this deposit was the result of construction. Initial partial collapse of the roof had preceded the first silting of the interior, which was followed by further collapse of the roof and wall poles under the thick covering of silt and sand that had been used to insulate the structure. Poles and posts that had remained standing finally fell or rotted off at the base and these were being incorporated into the moss and root mat when I first saw the site. The lower parts of two front posts were still standing, but the depression did not accurately define the size of the house. We found that when the walls had collapsed inward a considerable amount of material that had been banked against the walls had slumped inward, reducing the size of the pit by almost three feet along each wall. This was discovered by degrees as we expanded our original excavations and waited for the ground to thaw so we could reach the edges of the floor. Work on the frozen tunnel continued until September, at which time heavy night frosts made it impossible to complete the excavation. Here, and at both the Lake Creek and Okak sites, artifacts and faunal remains excavated from the house floor were recorded two-dimensionally in plan.

The Okak Site

A small, two-house village was discovered, almost coincidentally with our arrival in 1968, by J.E., an Alatna Inupiat (Fig. 3.2). We named it "Okak" after his grandfather. This site is located in a spruce grove along the south side of the Alatna River where J.E. had been cutting logs, about five river miles and three direct miles above the confluence of the Alatna with the Koyukuk River at Allakaket. The tunnel entrance of one house is perpendicular to the river and points southwestward (245 degrees magnetic azimuth) away from the river, while the second house, located a few metres upriver from the first, faces inland and downriver at an angle to the first house. There is an old swale and small horseshoe lake upstream and inland from the site, but the houses may not have been oriented with deliberate reference to this feature. According to the Koyukuk Athapaskans, tunnel entrances should open downriver. If a person died nearby, his spirit would go up river and not enter a house whose tunnel pointed downstream.

J.E. had no prior knowledge of this village. Although it is located only a few hundred yards from a former fishing camp site of his mother, he did not recall having heard her mention it or forbidding him to go there. Both Indian and inland Inupiat mothers customarily cautioned their children to stay away from abandoned places where the "old people" lived. The settlement appears to have been completely unknown to local residents. Recovered artifacts nevertheless date well into the second half of the 19th century.

We completely excavated the first house and its tunnel (Pl. 15). It was of especial interest because it had a back room or alcove that opened into the main structure. There was no particular indication of the function of this room, an uncommon feature for upper Koyukuk Athapaskan houses, but it apparently had had a low roof. Two pits located close to this house also were excavated. One was empty. The other, possibly a small cache pit, contained a crooked knife blade and fragmented bones. The tunnel and part of the second house also were excavated to obtain further structural details. Both houses had some posts and sections of standing wall that were partially exposed. The problems of excavation at Okak tended to be the same as those encountered at the Kayak site, but the low side walls were largely still standing and we did not encounter frost in the tunnels. Both standing and deeply buried timbers were well preserved, but those which had collapsed late and had fallen on the surface were in very bad condition. A thick covering of sand and gravel, as well as roots from the willow, poplar and spruce saplings which grew in the housepit, made the initial excavation particularly slow. Sand and gravel which had been used to bank and cover the structure was 40 cm thick locally but averaged less. Five centimeters of silt covered the floor and probably is derived from a flood that occurred when the house was still standing. The site is situated on slightly elevated ground above the level of the severe 1968 flood.

Judging from the artifacts recovered, the house was abandoned before the Gold Rush of 1898-99, and probably well before 1890. The ethnicity of its residents is unknown. No contemporary people remembered it or knew of its existence until J. E. found it in 1968. The Okak house, therefore, could have been inhabited by either Athapaskans or Inupiat. During the latter part of the 19th century Inupiat lived on the upper Alatna, near Siruk Creek and beyond. Okak may represent an early extension of Inupiat movement to the Koyukuk before the gold rush. If this were the case, its residents may have been related to Kobuk Inupiat who stopped briefly on the Koyukuk before moving on to Beaver on the Yukon in the early 1930's, and the incident either unknown to or forgotten by Koyukuk Inupiat.

Site Terrain

Each site is located on low terrace fills of river bottom and/or the flood plain. Old topographic benches and hillock terrain of whatever origin was avoided for house sites. This observation extends to other reported housepit sites as well. A striking case in point is provided by the Dosennaughten site where two houses, found at flood level, immediately back up on well elevated undulating terrain (McFadyen Clark 1974). Within the bottomland context, houses are located on slightly elevated sand and gravel terrace benches which, together with swales and old filled channels and oxbow lakes, form the usual mosaic of stream course terrain. Thus, in a very localized sense, elevated dry terrain was chosen for the houses. These locations nevertheless usually were not high enough to escape inundation during extreme floods that sometimes occur during the spring breakup. Spring flooding, however, was not a problem to the occupants because these houses were only occupied in winter.

The houses are usually located at the edge of dry ground next to old channels and swales. The swales provided some drainage and perhaps the differential elevation lowered the water table at the houses. It is also at these better drained edges that one finds stands of large spruce trees which may have provided shelter and concealment. Farther back, but at the same elevation, there is shrub tundra and black spruce. Possibly when the sites were occupied the swales were river sloughs, but because the houses were occupied during the cold season, and none located were ever far from a river, actual water frontage may not have been an important factor.

Local Environment and Resources

Lake Creek and Vicinity

Lake Creek has the advantage of being located where a secondary river is joined by a tertiary stream, i.e., Kanuti River and Lake Creek, respectively (Fig. 3.1). The first was used both for communication and for fishing, utilizing the resources of the Kanuti basin; and the second, for fishing, exploiting the fish that enter and leave Lake Todatonten. The area south of the Lake Creek site includes the Lake Creek-Lake Todatonten drainage, with its numerous small lakes and prime wildlife habitat consisting of both lowlands and uplands. From the site, it is only a short trip down to the mouth of the Kanuti River where it empties into the Koyukuk. It is a somewhat longer trip eastward through the Kanuti "canyon" into the highly productive Kanuti flats. During the period 1899-1925, occupants of the Lake Creek vicinity exploited this entire area, although they also spent part of the year in new settlements on the Koyukuk (McFadyen Clark field notes). Earlier inhabitants probably utilized essentially the same territory and may have had salmon camps on the Koyukuk River.

Physiographically, Lake Creek is an area of stream valley flats, slightly elevated flat uplands, and hills. Higher hills and mountains lie to the south and east. It lies within the Indian River Upland physiographic region which is a very complex one encompassing major drainage valleys, mountains, small sedimentary basins and flats (Wahrhaftig 1965). The Kanuti Flats are located to the east.

Vegetation is a major determinant of wildlife habitat. Most of the cover near Lake Creek is Lowland Spruce-Hardwood forest (Alaska Regional Profiles VI), with open shrubby or muskeg areas. On the hills to the south and east there is Upland Spruce-Hardwood forest, while the basin drained by Lake Creek contains Low Brush Bog and Muskeg vegetation types. Similar wet conditions, that do not support trees, may be found on gentle, north-facing slopes. Locally there are patches of Flood Plain Thickets (High Bush) and Bottomland Spruce-Poplar Forest. Unlike conditions along the main rivers, the last is essentially lacking, although there is a small patch of Bottomland-Spruce Poplar Forest at the mouth of Lake Creek. This distribution presents a mosaic of habitats with many ecotones. Broad expanses characterized by a single vegetation type are lacking. Altogether, this situation favors the presence of abundant and varied wildlife.

Virtually all species of mammals reported in Chapter 2, except mountain sheep, are present in the vicinity of Lake Creek, as also are most fowl and many fish. Little information, however, is available on their relative frequency. The lower Kanuti drainage contains moose habitat, and formerly caribou reportedly were hunted year round in the hills to the south and east near Caribou Mountain. The flats and numerous small ponds located in the Lake Creek drainage west of Lake Todatonten are good for beaver and muskrat. The latter also are common in some of the small lakes along the Kanuti River near Lake Creek. In 1968, a high population of beaver was observed at the north end of Lake Todatonten which had not been trapped for several seasons. During the present century otter, mink and marten also have been trapped there, and throughout the memory culture horizon, it has always been a good place to hunt ducks. A moderate number of waterfowl moult and nest along the Kanuti River and at Lake Todatonten, although not to the same extent as on the Kanuti Flats (Alaska Regional Profiles).

Basket traps were set at the outlet of Lake Todatonten, in Lake Creek near its mouth, and in the Kanuti River near Lake Creek to catch grayling, small whitefish, and probably other species during their seasonal movements, especially in the autumn. Summer fishing was done on the lower Kanuti close to the Koyukuk. Fish resources of this area and the lowermost Alatna valley are listed in Table 3.2. Sheefish and salmon are lacking from the Kanuti drainage, but they are present in the Alatna River. Although they are not as prolific as some species, sheefish, where available, are important because of their large size. On the Koyukuk River salmon are the most important of all fish. During the 20th century, few salmon have been reported in the Kanuti drainage by both local residents and biologists, but they are not numerous and apparently there has been no significant harvest of them there within memory, i.e., about 100 years.

The hill near the outlet of Lake Todatonten, on the north side, is an especially good berrying ground.

Lake Creek and its environs thus appears to be a very good area for mammalian food resources, and also for furbearers and birds, including spruce grouse, but not especially so for waterfowl. The fishery lacks sheefish and, essentially, salmon, but other fish were sufficiently abundant within the present century that in times of failure of the salmon run on the Koyukuk River, people installed traps in the lower Kanuti river during the summer for whitefish and other species.

In defining the environs of Lake Creek, I have attempted to circumscribe an area between the mouth of the creek where the contact-period site is located and later occupation is documented; Lake Todatonten, where trapping and fishing is documented through oral accounts; the hills to the south where there were caribou, and the confluence of the Kanuti and Koyukuk River where there was fishing. In direct distances, it is seven miles between the mouth of Lake Creek and the Koyukuk River, and sixteen miles between the Lake Creek site and the south end of Lake Todatonten. The same distance takes one into hills near the lake, but one would need to travel a few miles farther to reach the limits of the flats drained by Lake Creek and Indian Mountain to the south. The maximum distance

TABLE 3.2. FISH RESOURCES OF KANUTI-LAKE CREEK AND THE LOWER ALATNA

Species*	Lake Creek & Vicinity	Alatna Mouth & Vicinity
Longnose sucker	Present: plentiful 1.5 mi above mouth of Kanuti	Present
Blackfish	Present: plentiful west of Lake Todatonten	Present in small lakes
Burbot (loche)	Present: locally small and not numerous	Present:strong run at Allakaket
Arctic grayling	Present: numerous in season	Present:numerous in season
Sheefish (inconnu)	Absent	Present:common seasonally
Northern pike	Present	Present
King salmon	Essentially absent: rare, no harvest recorded	Present:not numerous
Chum salmon	Essentially absent: rare, no harvest recorded	Present:moderately numerous
Silver salmon	Absent	Present:not numerous
Cisco (herring)	Present	Present
Humpback whitefish	Present?	Present:common
Broad whitefish	Present?	Present
Round whitefish	Presumed present: no data, not numerous?	Present:not numerous? No data
Arctic char	Occasionally present: no significant harvest	Occasionally present: no significant harvest
Lake trout	Absent	Absent; present upriver

*For taxonomic nomenclature see Table 2.2.

covers an area greater than that which a person would likely exploit in a single day and still return to the base at Lake Creek. If, however, one were to spend a night camped out, a person travelling the river courses by snowshoe could easily reach the lower Alatna settlements at the Okak and Kayak sites which are only 20 miles overland from the Lake Creek houses (McFadyen Clark 1974; McFadyen and D. Clark 1974).

The Lower Alatna and its Confluence with the Koyukuk River

The lower Alatna area discussion is limited to a region of the same order of magnitude as that for Lake Creek. A distance or radius of seven miles places one up the Alatna River near Black Jack Cabin, northeastward into the Henshaw Hills, and eastward and southwestward to the Koyukuk River, several miles above and below Allakaket, respectively. Sixteen miles takes one up the Alatna River to a point about five miles below Siruk Creek. This greater radius encloses many miles of the Koyukuk River from about a mile below the mouth of the Kanuti River to a location just a few miles below the mouth of the South Fork River. It reaches eastward into the Kanuti Flats, but not to the core of the flats. Heaviest utilization of this area probably occurred in a zone extending down the Alatna drainage and eastward along the Koyukuk River towards the upper Kanuti flats.

The Kayak and Okak sites are so close to the mouth of the Alatna River that for many purposes their location can be equated with the confluence of the Koyukuk and the Alatna rivers (Fig. 3.2). Resources on the lower Alatna appear to have been the same as those along the adjacent Koyukuk River, although some aspects of the fishery may have been attenuated. The principal feature of the landscape is the river valley, but near its mouth the Alatna valley broadens and merges with the Koyukuk valley. In this riverine lowland area, especially to the immediate east and northeast of the sites, there are many lakes. Hills lie to the northeast between the Alatna valley and Henshaw Creek, while to the southwest there is benchland. The flats and lowlands are part of the Kanuti Flats physiographic area.

Surface geology consists of unconsolidated material. Outside the limits of recent river deposits, the lower Alatna valley is mantled with early Wisconsin glacial drift and moraine and other Pleistocene deposits, such as outcrop in the Alatna bluffs. At Lake Creek, however, there are deposits and fills of non-glacial origin and lesser amounts of recent river alluvium. This difference apparently is reflected in the greater extent of Bottomland Spruce-Poplar forest along the lower Alatna. The forest lies in a belt along the river course, while Lowland Spruce forest occupies all the southwest side of the valley and the broad area around the confluence of the Alatna with the Koyukuk River. Upland Spruce-Hardwood forest covers the hills on the northeast side of the Alatna, except where the forest has been destroyed by fire. Repeated fires, in conjunction with permafrost and topography, have markedly affected the succession of vegetation and the present forest mosaic. These forest types (Alaska Regional Profiles Vol. VI) are far more complex than their names may suggest. For instance, the Bottomland Spruce-Poplar forest contains black spruce, birch and aspen in addition to tall white spruce and balsam poplar. The ground cover is of high and low shrubs, ferns, mosses and lichens. Areas of moist or shrubby tundra are interspersed with the forest; and on river bars being colonized by vegetation, there are willow thickets and balsam poplar.

These plant communities, together with the riverine and lake-pond aquatic environments, provide a range of habitats for a variety of fauna. Similar to the Lake Creek area, virtually all species of mammals reported for the Koyukuk region, except mountain sheep, are available at Okak or farther up the river. All fish species of importance to Koyukuk residents, as well as ptarmigan, spruce grouse and numbers of waterfowl, are available. Southward-migrating caribou often cross the lower valley. Moose usually are present and a high winter concentration is reported for the middle valley, but it is interesting to note that in the 1970s after this study was completed, moose decreased. Residents of the Alatna valley had easier access to mountain sheep, and probably also to brown bear, marmot, and ground squirrels than did people living farther south in the Koyukuk drainage, although to obtain this game they had to travel up the river well beyond the Okak site and usually beyond Siruk. Islands in the Alatna are well suited for rabbit drives (Murie n.d. Box 1 Folder 2). I lack quantitative data for beaver and muskrat, but Inupiat at Alatna describe the region of numerous lakes near the confluence with the Koyukuk as being good trapping territory. For areas farther up the Alatna, Murie (n.d. Box 1 Folder 2) reports that both species are scarce. However, at the time of Murie's visit in 1926, all fur bearers in the region centering on Allakaket were scarce or trapped down to low numbers.

The entire Alatna valley is a waterfowl nesting and moulting area and a minor flyway. The lower valley, to a point about one half way to Siruk, is rated as high-density waterfowl range; but habitat along the Koyukuk, downriver from Allakaket, is rated as medium density.

Fish found in the Alatna River are listed in Table 3.2. There have been no fishcamps on the river since 1950, although Inupiat seine there in the autumn. In 1968, two river boats were loaded with fish during the seining trip undertaken just before freezeup. Fishing that year was reported to have been bad because the water was low. Fish resources are only available seasonally. Local residents claim that fish over-winter in 15-foot-deep pools in the Koyukuk River. If this depth is required, I doubt if any fish over-winter in either the Alatna River or in the Koyukuk above Allakaket. All the sheefish which reach Allakaket turn into the Alatna to ascend as far as Siruk Creek and northward to Help-Me-Jack creek to spawn. After several days in the spawning area, the sheefish descend about the time of freezeup. In November and December burbot, sucker, and some pike pass Allakaket on their way downriver to deeper water. Keyhole traps were installed through the ice into about five feet of water at this time. If desired, the trap could be operated from freezeup until March, but the best fishing was limited to a few days at the beginning of winter when 200 to 300 loche, sucker and a few pike were taken from the trap every day or two. Heller and Scott (1966) describe how, after a few days, the harvest dwindled to one or two score. Thickening ice and the exodus of fish for deeper water made fish a poor resource for full winter exploitation.

Slightly elevated ground located near Lake Dosennaughten, and benchland slopes a mile southeast of Allakaket, are among localities where berries have been harvested in recent years.

Although the roster of mammals, fish and other species discussed above for both Lake Creek and the mouth of the Alatna River may give an impression of abundance, some resources are available only on a seasonal basis and others are cyclic and subject to marked variations in frequency. The procession of cycles or periods can present serious problems to those who live in a subsistence-based society. In 1908, for example, there were no moose or caribou on the Koyukuk, the hare cycle also was low, and this was climaxed by failure of the fishery at Allakaket.

> Just before leaving Tanana there came a letter out of the Koyukuk from Miss Carter, telling that the natives were on the verge of starvation. The fish failed last summer: whether by reason of the unusual lowness of the water they turned away from that river...or whether they came as per usual but the great clearness of the water [that commonly accompanies low water] enabled them to see and avoid the nets and traps, no man knows. We hoped the game would supplement the scarcity of fish, but there has been no game this winter, not even rabbits; and no fur to sell for flour (Letter Hudson Stuck to John Wood, 18 March 1909, Church Historical Archives, Austin).

Ethnohistory and Oral Traditions

Site specific oral tradition and ethnohistory, *sensu stricto*, is reviewed in this section to provide greater insight into the three small winter villages and supplement the culture history overview in Chapter 2. For two of these sites, Lake Creek and Kayak, there is a good deal of information available, but for the Okak site there is none. The absence of information about Okak is intriguing and suggests several avenues for interpreting the ethnicity of its residents -- i.e., who really did live in these houses?

Lake Creek

Ethnohistory. Traders from the Yukon -- 1884. Allen (1887) states that the trader, Mayo, went overland to Lake Creek (Kenootena) in 1884; and he alludes to the likelihood that trading trips to Kenootena would be continued. This makes Kenootena the first site of direct historic conjunction in the Koyukuk drainage north of the Dalbi-Huslia-Dakli area.

Lt. Allen -- 1885. Allen's account is the only contemporary source of information for the Lake Creek settlement in the mid-1880s. Fickett, who accompanied Allen, gives no details in his report. An unoccupied fishing camp, presumably an autumn camp, was passed below the outlet of Lake Todatonten, the major source for Lake Creek. Several miles to the north, after traversing the length of "travelled hill" (translation of local Koyukon name), Allen came to the mouth of Mentanontli River or Lake Creek.

> We left camp August 3 at 5:30, and for four hours trod over a marshy soil to the junction of the Mentanontlekakat and Konootena rivers [Kanutna, now Kanuti; the "marshy ground" is terrain north of "travelled hill"]. On arriving there several shots were fired to notify the villagers on the Konootena, one-half mile above, of our approach. In a few minutes canoes came down the river and we were paddled up it to a village of 5 men, 3 women, and 5 children, situated on its left bank. The river at this place is about 30 yards wide and 5 or 6 feet deep (Allen 1900:456).

No further information is provided on the appearance or nature of the settlement. We can be certain that at this season the people were not inhabiting their low, dimly lit, damp winter quarters, although the location accords well with that of the house site.

In the period when the houses were occupied, the lake at the site, which fills an old river channel, undoubtedly was more open and may have been a slough if it did not carry the main channel. I am not certain whether or not the lake was formed by Lake Creek or the Kanuti River, and the answer is not readily apparent from the oblique air photograph of the site (Pl.10B). Although the smaller Lake Creek forms meanders, long, deep, wide, quiet reaches are uncommon or absent in this fast stream and thus the location most likely is a former channel of the Kanuti River. Moreover, the house site, present and probable past mouths of Lake Creek, and locations visited by Allen are all within one mile of one another. Allen did not identify the type of domestic architecture present at Konootena. At fishing camps, observed elsewhere in the Koyukuk drainage on this trip, Fickett (n.d., Aug. 16) reported cotton tents and brush houses. The latter might have been meat houses which also served to finish drying fish.

Prospectors -- 1888. In April 1888 a group of prospectors and hunters from the Yukon River took a lost white man, Mr. Larson, from some Indians on the Kanuti River who had saved him from starvation (Callahan 1975). Prospecting parties sometimes went overland early in the spring when it was still possible to travel on the snow and ice. When they reached suitable timber on a large stream they built boats which, with breakup pending, soon would be put in use for continuing travel. The principal overland route from Tanana led to Lake Creek, as in later times did the mail trail. Thus, people there likely met prospectors in the spring. Larson seems to have been picked up later in the season when the Koyukuk may have dispersed to a number of camps (Callahan's account is not detailed).

Mendenhall -- 1901. In mid-July 1901, Mendenhall (1902) stopped at an Indian fishing camp on the Kanuti River at the mouth of Lake Creek where he obtained a few supplies. No details are given, but some may be assumed inasmuch as the group visited is identified as a fishing party. The fact that Mendenhall turned to the Indians for supplies of imported, non-native food, and his remarks on the Koyukuk Indians certainly show that by 1900 they had entered an era very different from that in which they had lived 15 years earlier, when Allen said that the Koyukuk did not have enough caribou skins from which to make clothing.

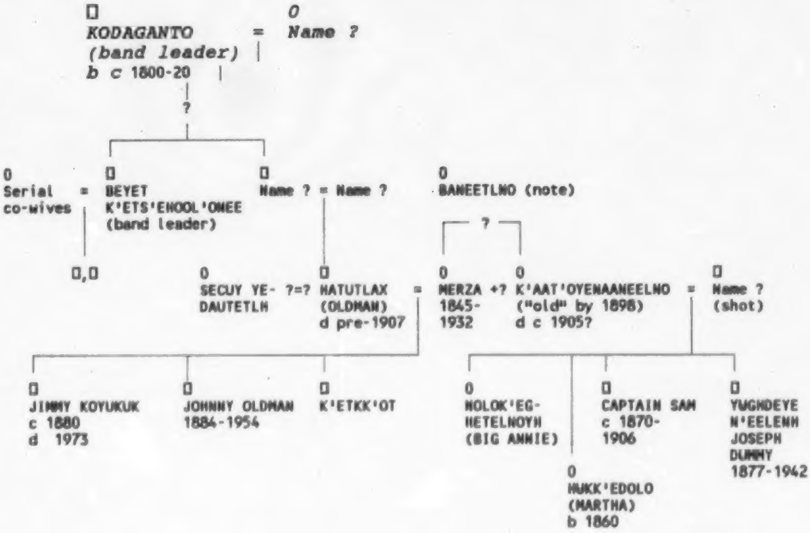
> On the Kanuti River is a...fishing settlement of perhaps 75 Koyukuk natives [numbers overstated for Lake Creek?, but here Mendenhall may include persons congregated on the Koyukuk near the mouth of the Kanuti]. They are very generally supplied with food and clothing of white manufacture through the work which they do for the Koyukuk miners, or by the exchange of game and furs for articles kept by the traders at the various stations (Mendenhall 1902:52).

The contact period, in the narrow sense, was over and the semisubterranean houses at Lake Creek had been abandoned, perhaps for many years.

Traditional Information. During the first three decades of the present century several families had seasonal camps and cabins at the mouth of Lake Creek and elsewhere in the Kanuti drainage. Except when they were in town, at Allakaket or Arctic City, the Kanuti was their primary locus of activity throughout the year. The majority of these people or their parents had moved up the Koyukuk River to the Kanuti drainage and adjacent reaches of the Koyukuk during the last decade of the previous century. Others had come from various places in the Koyukuk region, married into the local group, and were living with their parents-in-law. These people may be the ones Mendenhall met in 1901. Only a few were from families who had originally inhabited the Lake Creek-Todatonten area which, presumably, Allen met.

The original band is associated with the Oldman/Koyukuk family, of which there are few known members for the precontact period, although some not known by name are reported (Fig. 3.3). From the contact traditional period through the 1970s, however, there were several Oldman and Koyukuk families living in villages along the river. Traditionally these people lived at the mouth of Lake Creek, on up Lake Creek and throughout an area of small lakes to Lake Todatonten, and southward from there into the Melozitna drainage where they had a 20-mile-long caribou fence (McFadyen Clark 1974). This band had affinal links with the Huslia area, as well as territorial contact with that area through the Melozitna drainage. It was reported to me that some of its members originated from "way down river." The latter are also shown in Figure 3.3. One of the earliest recorded persons to move up river to join this band from the down river was Joe Dummy. Joe, then an infant, his mother, and perhaps some of his older siblings probably came about 1878-1880 after his father had been shot during an internecine feud. Others came later during the next decade. There had always been some interchange of people among the several bands of Koyukuk Athapaskans (McFadyen Clark 1975; field notes). The genealogical reconstructions offered here are tentative and unfortunately will remain so because no elders alive today remember all the details. Early raids, family separations, high mortality due to epidemics, polygyny, some polyandry, adoptions, the switch from Indian to Latin (from Roman Catholic missionaries) and English names, failing memories and the intrusion of white men, some of whom were biological but not sociological fathers, all contribute to the difficulty of tracing family lines.

J.T. White (White n.d. a,b,c,d) records that a number of persons whom he met living near the mouth of the Dall River on the Yukon near Stevens Village had come from Hortochaket near the mouth of the Kanuti River not far from Arctic City. There is evidence in addition to White's records that indicate that Stevens-Rampart area people also came from various locations in the Koyukuk drainage and elsewhere. White reports that he was told that some people had died at Hortochaket and that the rest had moved away. He does not date this exodus, but some of those reportedly involved were middle-aged; for example, "Pilot" Sam, born 1862 or 1870 according to conflicting census records, whose picture faces page 216 in Cantwell (1902). This event likely occurred within one, two or three decades of the arrival of the *Nunivak* with surgeon White at the Dall River. "Hortochaket" evidently refers to the mouth of the Kanuti River, as White in fact states. Deletion of the suffix "*chaket*" and addition of *na* for river would yield *Hortona*, a term vaguely similar to Kanutna or Kornutna which is the traditional name of the Kanuti River. Although no village predating 1899 has been reported to us for this specific locality, the area around the mouth of the river was a traditional gathering point and Lake Creek is not very far upriver. There should be little doubt that the Hortochaket people came from


KODAGANTO (band leader) b c 1800-20
= Name ?
?
Serial co-wives
= BEYET K'ETS'EHOOL'ONEE (band leader)
Name ? = Name ?
BANEETLNO (note)
?
0,0
SECUY YE-DAUTETLH
?=?
HATUTLAX (OLDMAN) d pre-1907
=
MERZA 1845-1932
+?
K'AAT'OYENAANEELNO ("old" by 1898) d c 1905?
=
Name ? (shot)
JIMMY KOYUKUK c 1880 d 1973
JOHNNY OLDMAN 1884-1954
K'ETKK'OT
NOLOK'EG-HETELNOYH (BIG ANNIE)
HUKK'EDOLO (MARTHA) b 1860
CAPTAIN SAM c 1870-1906
YUGHDEYE N'EELENH JOSEPH DUMMY 1877-1942

Genealogy of persons associated with Lake Creek-Lake Todatonten (Todaatltonh Denh).

Notes: Some accounts state that Oldman's father was Beyet K'ets'ehool'-onee; data variously indicate that K'aat'oyenaaneelno was Merza's sister or her mother. K'aat'oyenaaneelno moved from her home near Huslia to the Lake Creek area with her children about 1880. Persons shown here as her children are not reported as being Merza's siblings, thus it is unlikely that K'aat... was Merza's mother. Big Annie sometimes is identified as Johnny Oldman's and Jimmy Koyukuk's sister, Joseph Dummy as Jimmy Koyukuk's half-brother (same father). This relationship strongly suggests that K'aat'oyenaaneelno had been taken into Oldman's presumably polygenous family. Baneetlno is said to be Johnny Oldman's grandmother, but I have not ascertained whether she was in the maternal or the paternal line. Hukk'edolo, Francis Olin's stepmother, probably did not live in the Lake Creek area.

Fig. 3.3. Lake Creek-Tadatonten area genealogy.

the Kanuti-Todatonten band area. Earlier it was noted that Allen's census of the one camp there, at Lake Creek, appears to be low for a functioning band. Subsequent representation of this band in the Koyukuk River population, as traced through male members, is limited to descendants of Oldman (Jimmy Koyukuk, Johnny Oldman and Joe Dummy).

The inferred history of this band then, as viewed both from the Koyukuk and the Dall River-Stevens Village area, is one of heavy impact from disease, probably the epidemic that shortly preceded Allen's exploration in 1885. This was followed by emigration of many of the survivors to the Yukon River. To whom the Lake Creek site houses belonged probably never will be known with certainty. Did they die in the epidemic, were they persons who moved to the Yukon, or were they persons whom Allen met? If the later is so, Jimmy Koyukuk with whom I worked in 1961 would have been a small child at the time of Allen's visit. In fact he remembered his visit to their camp. Unfortunately, I did not ask the right questions during my first year of field work on the Koyukuk, and when I returned Jimmy Koyukuk was deaf and his memory had failed. Subsequently, sometime in the 1890s, the nearly vacated area was reoccupied.

No one queried in Allakaket in 1961 and 1968 was certain who had occupied these houses, although the Oldman family was suggested. L.S., of Huslia, who was born in the Allakaket area in 1905, had been told by his father, O.S., who moved to the Lake Creek area in the 1890s, not to "go back there" -- the traditional caution given to youths when elders wanted them to avoid the places where "the old people lived." Association with the ambivalent spirits of the past is at least implied if not explicit in this warning.

Uncertainty about the identification of inhabitants also applies to other house sites, even in cases where these date to the contact period and their owners can safely be presumed to be named in my genealogical data. In some cases no occupant is proffered; in other cases there is incompatible information. This is not likely to be a case of information being withheld, although in traditional Koyukuk culture there apparently was some danger in talking about the deceased, "old people," in the context of specific localities. It should be considered that during a lifetime a person occupied or built several dwellings, none impressive monuments to architecture, and in some cases these may have been built in close proximity to one another. Other people also have lived in the same areas. Whereas the location of these places is still known, it is neither practicable nor necessary for the Koyukon to remember specific details 100 years later.

Confluence of the Alatna with the Koyukuk: The Kayak and Okak Sites

Ethnohistory. Lt. Allen -- August 1885. Lt. Allen was the first non-native person to see the mouth of the Alatna River. He recorded seeing Alatna Bluff, which he was told was called *Unatlotly* [pronounced *nasaentluktlili* by a respondent from the Arctic City-Allakaket region who had moved there from his former residence in Huslia. This person said that the word meant "that hill is caving in" from the active erosion taking place there]. Allen saw "on the right bank a miserable barabarra [semisubterranean structure] and a spruce-bough tepee -- the one a winter house, the other a summer one, but neither occupied" (Allen 1887, 1900). A few days later he met some Indian women and children headed from the South Fork to the Alatna River. The reported house location is reasonably close to that of the Kayak house, but it has been reported that shifts in the Koyukuk River have cut away the mouth of the Alatna and the northwest bank of the Koyukuk above Allakaket. Lack of a detailed map by Allen, and uncertainty introduced by displacement of the mouth of the Alatna make it impossible to determine whether or not it actually was the Kayak house that he saw. Nevertheless, although different houses may be involved, it is possible that they represent a certain continuity of settlement.

Schrader -- 1899, 1901. Geologist F.C. Schrader was in the Koyukuk drainage in 1899 and again in 1901 (Schrader 1901; Schrader and Peters 1904). His 1899 map shows a village on the southwest side of the Alatna at its mouth by two marks. The two marks may indicate either two dwellings or the fact that the village was small. In his second report he mentions that natives lived at the mouth of the Alatna River and that settlements on the Koyukuk in general consist of cabins and tents (Schrader and Peters 1904:33).

Lind -- December 1904. Allakaket attracted little notice and no white settlement during the gold rush of 1898-99 or earlier, which is surprising considering the relatively high banks and deep channel of the river there. After the first brief information pertaining to this locality in Schrader's reports, the next reference appears in Lind's account of driving a reindeer herd to Bettles (Lind 1906). Lind passed several Inupiat settlements or cabins on the Alatna River, including a substantial village located less than one day's travel by the herd above the mouth of the river. At the mouth he also found a cabin belonging to the Inupiat, "Big Charley."

Hudson Stuck -- 1906. In the winter of 1905-06 Archdeacon Stuck passed the mouth of the Alatna enroute to Arctic City, then the principal Athapaskan settlement on the Koyukuk. Observations made at this time undoubtedly influenced his decision to locate a mission at Allakaket. He noted that there were three families living at Allakaket just above the future site of the mission (Stuck 1914). These were Indian families, two of which had moved up the Koyukuk River during the preceding decade or two. It is likely that there also were several Inupiat families living near Alatna, although Stuck does not state that in the account of his first trip. The settlements seen by Schrader, Lind and Stuck postdate the era of semisubterranean houses, but one house built during that period, described in Appendix I, shows transitional attributes.

Traditional information -- Kayak site. O. N., Sr., the Alatna Inupiat who took me to the Kayak Site, suggested that it was the home of Kohalyeni, or "Rabbit Medicine Man," and the site of the principal episode in the Rabbit Medicine Man War. Details of this semi-legendary war between the Indians of the Koyukuk and the Kobuk Inupiat, or by some accounts with an Athapaskan and Inupiat-speaking group from the mouth of the Pah River tributary of the Kobuk will not be recounted here. It suffices to say that had this been Rabbit Medicine Man's house it should have been burned and, because the "war" probably was in the early 19th century, recovered contact period trade goods should not have included, especially items such as .44 calibre rimfire cartridges which postdate 1860. As the work at the site began to attract interest among people at Allakaket, two more probable occupants were proposed. These were (a) Hotoyeni (Hudughyenee) who was the grandmother of a woman living at Allakaket, and (b) Old Henzie who had moved up the river from the Dalby area and eventually became leader of the South Fork group.

Hotoyeni is remembered from the fact that her parents were killed at their village in the southeastern corner of the Kanuti drainage by the Kutchin ("Fort Yukon men") or by Indians from the

Tanana River. Details of the several brief accounts differ, or may be confused with other "wars," but only certain points are critical to dating the raid and Hotoyeni's house. At the time of the Sithylemenkat or Dobendaktonten raid, Hotoyeni had already left home and was living with her husband at the mouth of the Alatna River. One account reports that only one of the six raiders, who came as guests, had a gun; another account states that both sides had guns. In the first case the raid would have been early in the 1850s. Beginning in 1847 the Kutchin were getting muzzle loaders from Fort Yukon, but on the Koyukuk they did not have them until slightly later, perhaps the middle or later 1850s. If both sides had guns the raid could date a few years later, inasmuch as the several raids on eastern Koyukuk settlements appear to have been essentially a mid-century event when there were few Europeans in the region. Taking a conservatively late date, 1860, for the raid, and considering that Hotoyeni had already married and moved to the Alatna, and had been back home to visit, thus narrowly escaping disaster herself, construction of the house, if it is correctly identified, should date to 1859 or a few years earlier. This dating agrees with the fact that one of Howtoyeni's children (Big Eva Jack, Fig. 3.4) was born about 1860.

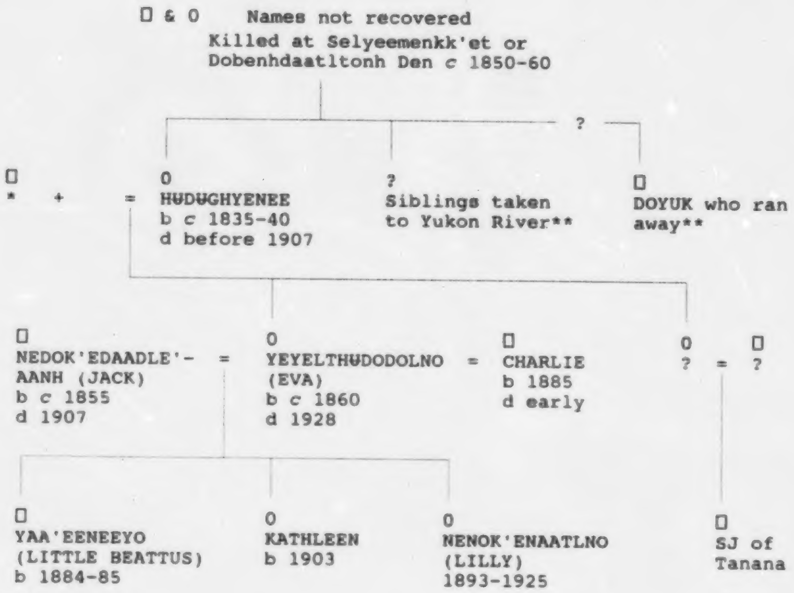
Hotoyeni died at Fish Creek, a tributary of the South Fork, at an undetermined date before the mission was established at Allakaket in 1907. Her daughter and son-in-law had a semisubterranean house at Fish Creek at the time white men were first coming into the area, probably early in the 1890s.

It is evident that Hotoyeni lived at various locations in the South Fork-Allakaket area from the late 1850s until her death, but accounts specifically tie her early home to the mouth of the Alatna. The .44 calibre rimfire cartridges excavated from the Kayak site are incompatible with an early 19th century date, and are just barely compatible with a middle 19th century date. In the Koyukuk drainage they were common in the 1880s and are unlikely to have appeared before 1870. They were superseded by more modern weapons from the 1890s onward. If the Kayak house were Hotoyeni's, I would assume that it was maintained and occupied for over a decade from the proposed time of its construction at the end the 1850s into the 1870s. A different occupant at a slightly later date is a feasible alternative.

Reasonably competent oral accounts state that Old Henzie lived at the mouth of the Alatna River after he had moved up from the Huslia-Dalby region and before he moved farther upriver to live at Henshaw and South Fork with his wife's people. With Old Henzie came his sister, who married into the Big William family, as also did Henzie (Fig. 3.5). Information about the early years of his family is sketchy, thus it is difficult to place accurately the time when they came to the area. Reportedly, but not without contradiction, he brought his mother with him and she died while they were living at the mouth of the Alatna. His father had died earlier.

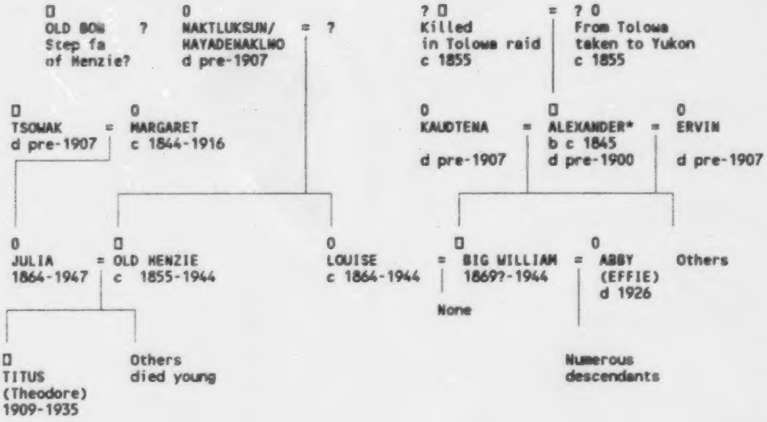
Genealogical information provides inadequate temporal cross checks. It appears that Henzie's sister, Julia, was not married during the 1890s, but that she was old enough to have married a decade earlier. A person tentatively identified as Old Henzie's brother was involved in the killing of John Bremner in 1888. Repercussions from that incident may have encouraged the family to move away from the Dalby area, although other factors may have caused the dispersal and movement upriver at this time. I would not, therefore, expect to find Old Henzie at the mouth of the Alatna River before about 1890 and the house would have been occupied for several years after that date. The explanation for possible residents of the Kayak house is tenuous. It is possible that critical information is missing. Although in the 1890s some upriver people were still living in semisubterranean houses, by 1885 those from the lower river were beginning to occupy log cabins. I do not doubt that Old Henzie would have built a log cabin, especially during the decade of the 1890s. This then leaves the Howtoyeni option as being the most viable.

Traditional information -- Okak site. I have no specific information about the residents of the Okak site. The location apparently had been abandoned before J. E.'s Inupiat relatives came to live near the mouth of the Alatna River before the end of the 19th century. The fact that the local Inupiat were unaware of the existence of this site may indicate that it was Athapaskan in origin. Inasmuch as the site is located reasonably close to the confluence of the Alatna with the Koyukuk, some of the information presented earlier may be relevant. The site probably was occupied sometime during the period 1870-1890 and its owners may be listed in genealogies or mentioned in oral accounts collected during the Koyukuk River Culture History Project. Although reservations have been expressed for identifying the Kayak and Okak houses with specific persons, it is possible that these houses may have been built and occupied by members of the South Fork band. This band was localized near the mouth of the South Fork River, but their territory extended westward part way up the Alatna River. Alexander, a Kutchin immigrant to the South Fork Band (personal communication: Eliza Jones, 1990), who later became an early South Fork headman, moved to South Fork from the Kanuti Lake region. The places where he lived include camps on the Alatna River and at the mouth of Henshaw Creek, where he died. One of his Alatna camps was near the locality known as Black Jack, a site only a few miles above the Okak site. Black Jack is a well-know location that has reportedly been occupied by both Inupiat and Athapaskans. During the late 1880s it was inhabited by the Inupiat, K. N.'s mother and father, and continued to be used periodically by members of that same family as late as 1970. Other Inupiat camps on the Alatna are found from the Okak site northward to Black Jack, Siruk and on up to the Malemute Fork of the Alatna -- near the Old Kobuk portage. Thus, because there is no oral tradition that relates specifically to the Okak site and it lies in an area known to have been occupied at different times by both Athapaskans and Inupiat, the ethnicity of its occupants is unknown.


□ & 0 Names not recovered
Killed at Selyeemenkk'et or
Dobenhdaatltonh Den *c* 1850-60
?
□
* + =
0
HʉDʉGHYENEE
b *c* 1835-40
d before 1907
?
Siblings taken
to Yukon River**
□
DOYUK who ran
away**
□
NEDOK'EDAADLE'-
AANH (JACK)
b *c* 1855
d 1907
=
0
YEYELTHʉDODOLNO
(EVA)
b *c* 1860
d 1928
=
□
CHARLIE
b 1885
d early
0
?
=
□
?
□
YAA'EENEEYO
(LITTLE BEATTUS)
b 1884-85
0
KATHLEEN
b 1903
0
NENOK'ENAATLNO
(LILLY)
1893-1925
□
SJ of
Tanana

Genealogy of Hʉdʉghyenee, possible occupant of the Kayak House. Notes: *The union is believed to be polyandrous. **Accounts of siblings being taken to the Yukon River and of Doyuk running away may refer to a raid at Tolowa, and identification of Doyuk as Hʉdʉghyenee's brother, by Koyukuk respondents, is uncertain. "Doyuk" may be an Inupiat name for Alexander who is associated with the Tolowa raid. Native names have been supplied by Eliza Jones, Alaska Native Language Center, Fairbanks.

Fig. 3.4. Genealogy of Hʉdʉghyenee, possible occupant of the Kayak house.


OLD BOW ? Step fa of Henzie?
NAKTLUKSUN/ HAYADENAKLNO d pre-1907 = ?
? □ Killed in Tolowa raid c 1855
= ? 0 From Tolowa taken to Yukon c 1855
TSOWAK d pre-1907
= MARGARET c 1844-1916
KAUDTENA d pre-1907
= ALEXANDER* b c 1845 d pre-1900
= ERVIN d pre-1907
JULIA 1864-1947
= OLD HENZIE c 1855-1944
LOUISE c 1864-1944
= BIG WILLIAM 1869?-1944
None
= ABBY (EFFIE) d 1926
Others
TITUS (Theodore) 1909-1935
Others died young
Numerous descendants

Genealogy of Old Henzie (Hensey), possible occupant of the Kayak house, and of Alexander, occupant of localities on the Alatna River and elsewhere.

Note: In addition to the two wives named, Alexander is reported to have had at least one other wife. In some cases they were co-wives. One died *c* 1880. Uncertainty exists in my records regarding the name of the mother of some of his children. The year 1907 is chosen as a genealogical dateline because for that date there exists a reasonably complete census for people of the upper river bands.

Fig. 3.5. Genealogies of Old Henzie, occupant of the Kayak House, and Alexander, who Lived at various Alatna River locations.

CHAPTER 4
KOYUKUK SEMISUBTERRANEAN HOUSES

Introduction

Traditional Koyukuk River semisubterranean houses were called *naklukno* (or *naklukeno*, *naklukena*) on the middle river or *hoyuk'nohh* by South Fork speakers. Today most local residents refer to them by the Inupiat term "igloo." There also are cases where outsiders have employed the Russian-Siberian term *barabara*.

In the preceding chapter the three village sites that are the focus of this study were described, local environments and resources for each was reviewed and I also speculated on the family and tribal affiliations of their residents. That information, plus the results from excavation of the sites and consultations with native consultants, in turn, provide the basic data to reconstruct the several houses tested in this study and describe them as they were built and may have appeared over a 100 years ago, not as the collapsed and partially disintegrated remains encountered in the 1960s. To facilitate interpretation, the house reconstruction information is presented in three levels of detail: (a) a brief general description; followed by (b) a more detailed narrative account of house construction; and finally in (c) an expanded discussion or documentation of certain attributes and details. These sections are followed by a commentary that explicates certain features of the figures that accompany the discussion. The chapter closes with a summary of traditional knowledge about house construction.

Pre-excavation Appearance

Before excavation the houses looked like shallow but distinct rectangular depressions (Pl. 15A), with clearly visible tunnels. Surrounding the depressions and further heightening their apparent relief were raised ridges or berms of ground. The depressions and parapets were overgrown with moss, shrubs, and young trees. These were sufficiently small that they could be cut out, but care had to be taken in pulling roots to preclude damage to underlying birchbark sheets and rotten wood. Protruding from the floor of the pits and from the corners were a few small posts (Pl. 15B) or bases of fallen posts. Along the sides of two houses the tops of some wall sections, which had tilted inward but were not completely caved and buried, were visible. Pieces of curled birchbark, originally from the roofs, protruded through the shrubs along the house centerlines where most of the material, especially soil from the roofs, had slid to the right or left leaving the center areas relatively exposed almost down to the original floor (Fig. 4.1). Squirrels had used the voids left in the upper collapsed parts of these structures to store large quantities of spruce nuts and cones.

Excavation Methods

The house pits were bisected by a baseline which ran through the tunnels to the rear walls. A tape stretched along this line provided one coordinate for recording provenance. The other planar coordinate was obtained by measuring right-angle offsets from the baseline. During excavation we attempted to observe whether an artifact or faunal element came from the living floor or layersinterpreted as being derived from the Roof. Nearly all collections are from the floor. Some initially thought to be from higher contexts have been reassessed and most of these evidently come from the floor in areas largely lacking overlying layers. Superimposition of structural elements was recorded through field drawings made during various stages of excavation. The floor layers were thin and it was realized that there would be little point in recording a depth coordinate for items found on the floor. The measurement error could have been of a greater magnitude than actual differences in depth. In only parts of two houses was there a floor separation indicating two accumulation episodes. Faunal elements were given field numbers if they were large enough to be marked, to record individualized locations. The position and color of glass beads was recorded but after removal the beads were pooled into a single collection from each house, a few localized clusters excepted.

Excavations in progress are shown in Plates 11, 12, 13 and 14.

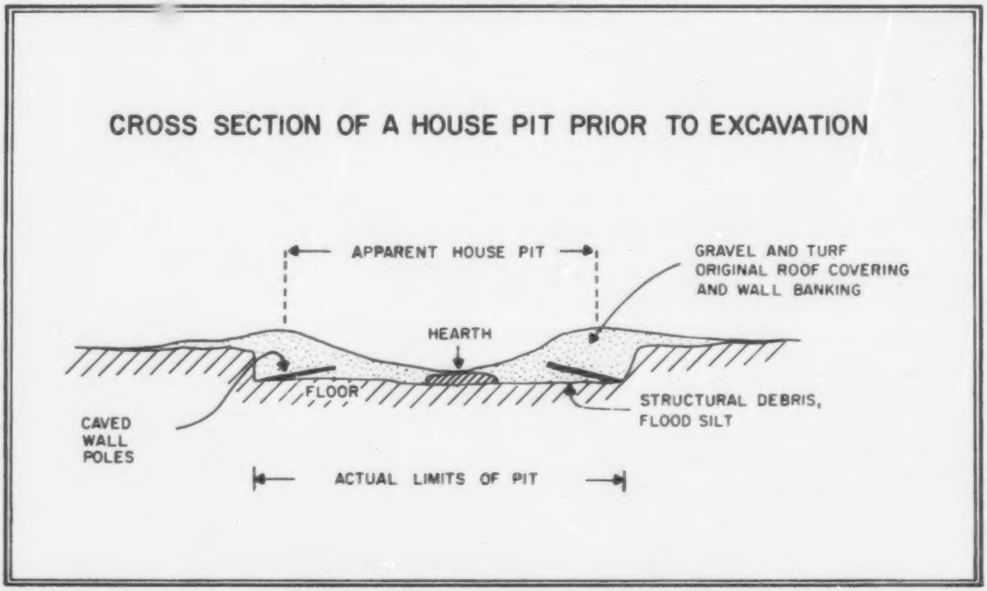

CROSS SECTION OF A HOUSE PIT PRIOR TO EXCAVATION
APPARENT HOUSE PIT
GRAVEL AND TURF ORIGINAL ROOF COVERING AND WALL BANKING
HEARTH
FLOOR
STRUCTURAL DEBRIS, FLOOD SILT
CAVED WALL POLES
ACTUAL LIMITS OF PIT

Fig. 4.1. Cross Section of a house pit prior to excavation.

Summary Description

At the time of excavation in 1968 the houses appeared as overgrown, shallow, rectangular depressions from which an occasional post or post stub projected. Two depressions were partially filled with flood-deposited silt. The three houses excavated, and several others that were observed, conform closely to the four-center-post semisubterranean house type for which I have presented a reconstruction in Figures 4.2 and 4.3. Variations from the general plan were the use of a second set of front center support posts which may have served primarily to support one end of the entry and, in the Okak House, a more complex floor plan.

At the Okak site the house entrance tunnels are 40 and 55 cm lower than the floors of the main rooms. These houses thus are to some degree of the arctic cold-trap type. At the other two sites the floors of the tunnels were not reached during excavation because of massive ice and frost, so I do not known how far below house floor level they were cut. All tunnels have heavy, longitudinal roof poles and short, light sidewall poles that incline slightly from the vertical. None of these extend to the floors of the entries, but instead originate from shelves at each side of the tunnel trenches. The trenches, themselves, extend outward from the front walls of the houses for 2 to 2.5 m. Short birchbark walls or wings extend into the houses from the entries to partition each into two sections, although the depressed trenches do not extend in as far as the ends of the wings.

A nearly rectangular pit, about 5 m square, was excavated to a depth of 65 to 80 cm (25-30 inches) to form the main room (Pl. 15A), then short posts, 65 to 85 cm high (exclusive of the portion sunk below floor level), were placed near each corner about 75 cm inward from the front and back walls and about 5 to 15 cm from the side walls. Next a wall retainer log or purlin was placed across each pair of side posts, but none were used at the front or back. The walls were then lined with short narrow pieces of split wood that reached to the height of the retainer log against which they were propped.

A pair of taller spruce posts was installed near each end of the room, approximately the same distance from the front and back walls as the corner posts, but closer to the center line. These supported the twin ridge poles. Rear posts of the Lake Creek house were 178 cm high, but the front posts were somewhat shorter. Other houses may not have had as much headroom, but even in this one it was almost impossible for an adult to stand erect except in the center of the house. A solid row of whole and split spruce roof poles extended from the ridge poles to the wall retainer poles at each side of the house (Pl. 11B), and there was a heavier pole at each end of the two lateral roof sections. The narrower flat central roof section evidently was covered by shorter pieces, and an area was left open above the hearth for the smoke hole. Front and rear walls were made of inclined poles that extended upward from the floor and inward to the ends of the roof (Pl. 12B). Corners were slightly rounded.

Once the superstructure was in place, it was covered with moss and shingled with sewn sheets of birch bark before it was banked with turf and sand or silt.

The hearth, located in the center of the structure, was slightly raised on a mound of sand and ash, and usually contained within a subrectangular timber enclosure (Pl. 13, 14B). Several boulders, probably placed to absorb heat, were found on the Lake Creek hearth (Pl. 13).

The archaeological floor consists of needles and twigs from spruce boughs. In one house at the Okak site, several planks formed a partial floor. Benches are vestigial or absent.

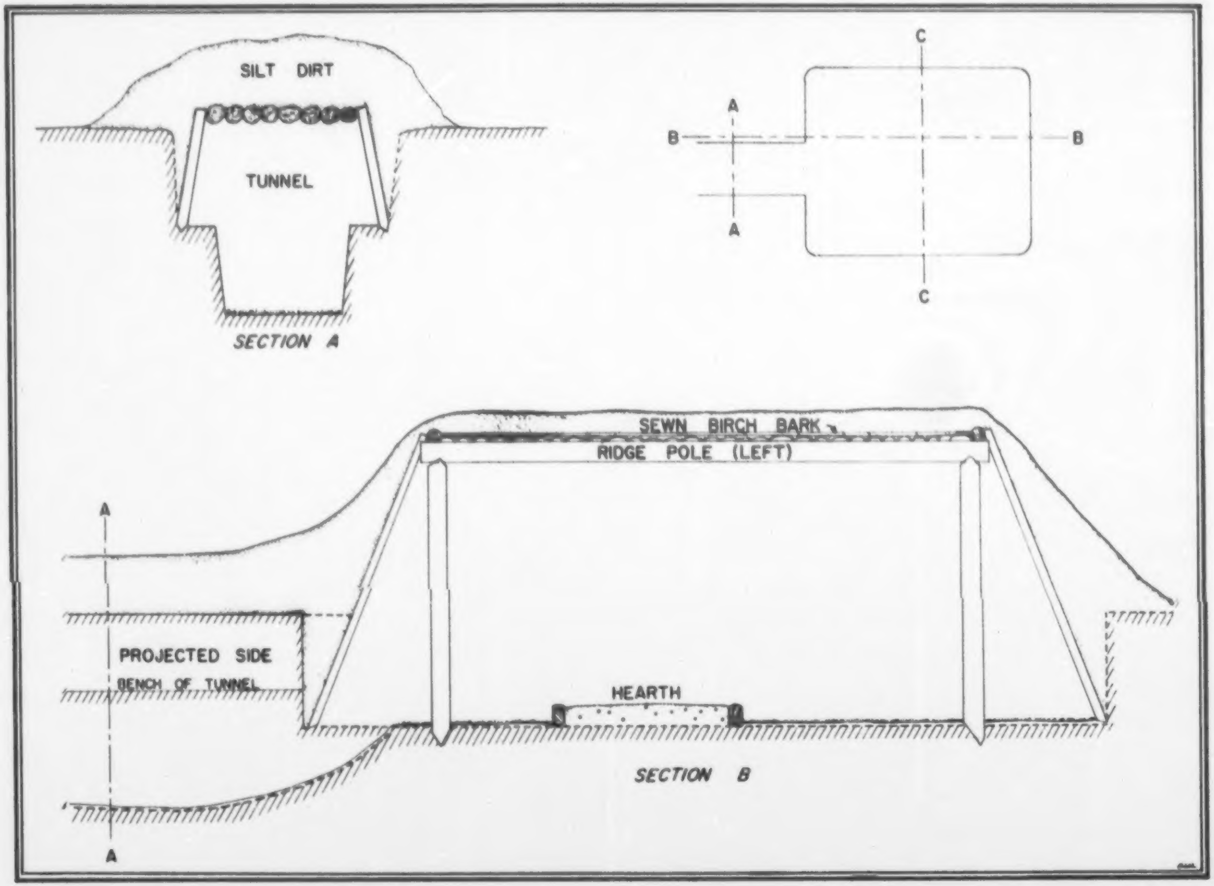

SILT DIRT
TUNNEL
SECTION A
A
B
B
A
C
C
SEWN BIRCH BARK
RIDGE POLE (LEFT)
A
PROJECTED SIDE
BENCH OF TUNNEL
HEARTH
SECTION B
A

Figure 4.2. Sectional reconstruction of Koyukuk River house: off-center longitudinal section and tunnel cross-section.

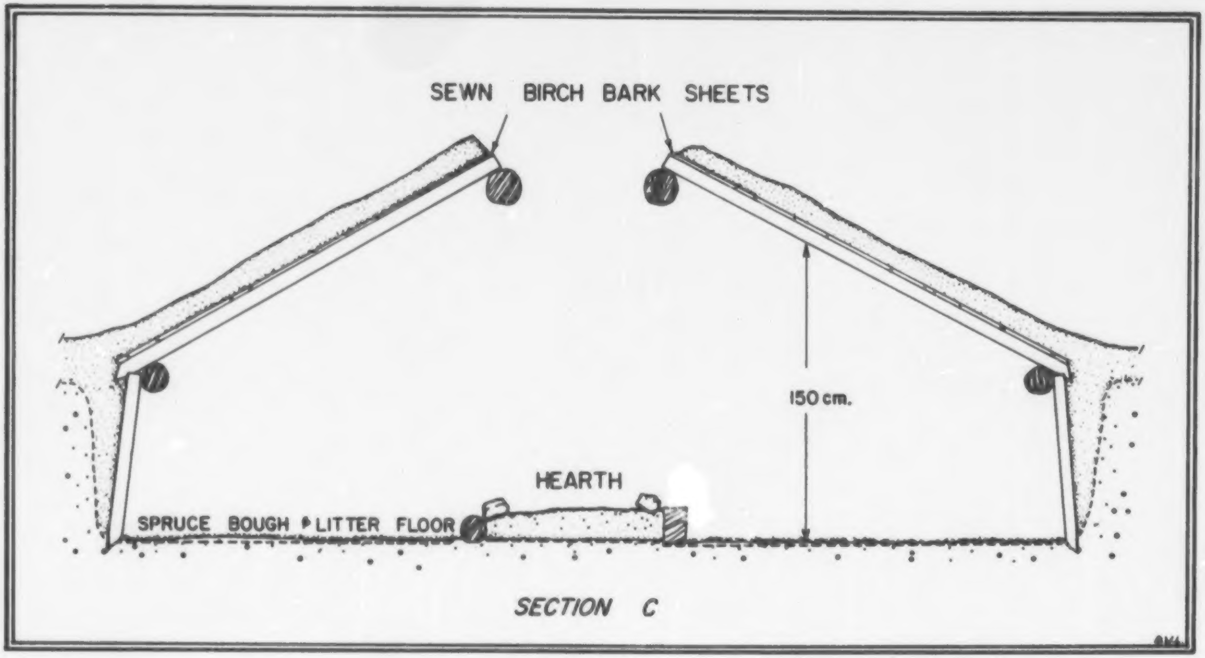

SEWN BIRCH BARK SHEETS
150 cm.
HEARTH
SPRUCE BOUGH & LITTER FLOOR
SECTION C

Figure 4.3. Reconstruction of Koyukuk house: medial cross-section.

Narrative Description of Construction

Giddings (1956) said that on the Kobuk River winter houses were built after the onset of cold weather, and to thaw the ground enough to dig the house it was necessary to build a fire on the site then laboriously pry up slabs of frozen earth to construct the house. I think that it is very unlikely that people chose to build their winter houses under such conditions. Perhaps the information that Giddings collected represented a special case that piqued the memory of his consultant. I consider it very unlikely that on the Koyukuk people consistently waited until after freeze-up to build their winter houses. Nevertheless, the reported Kobuk method raises a number of important questions. If one did not have a winter house to go to after fall camp, a person certainly would have had to have given some prior consideration to what he was going to do for shelter that winter. For example, by the end of the preceding spring he should have secured and stored the birchbark for the roof.

Actual construction would have to begin later in the year when the ground had thawed enough for the housepit to be excavated. The period at the end of August or in early September would be the best time because then there would be the least amount of frost in the ground, but one would have to avoid areas of shallow permafrost. The builder usually selected old, well-drained bank-edge locations where permafrost would not cause problems during excavation or result later in a wet, soggy floor. Mid-September may have been the best time to build a new house, although I have no direct information on when they usually were constructed, with the exception of one short comment from an Alatna Inupiat (ON, b 1888 Shungnak) who said that when she was a young woman she and her husband had to build a semisubterranean house in October after they returned from Kobuk. That year they arrived on the Koyukuk later than usual and had no place to stay. Okpik told me they had a difficult time digging the hole for the house because everything was frozen. She said they had to build a fire to thaw the ground before they dug the pit for their house. That year they removed the soil with "boards" and an antler because they had no shovel. Her final comment on this topic was, "we wait too late -- I tell Napoleon we should come earlier" (field notes 1961). I unfortunately did not pursue the issue further at the time and when I returned in 1968 Okpik was dead. By mid-September it freezes at night but the days are still quite warm and frozen crusts that form during the night would be manageable.

Construction was initiated by digging a pit 65 to 80 cm deep (25 to 31 inches) and about five meters square -- almost the exact size and shape of the house planned. Next a tunnel trench was excavated 40 to 55 cm (16 to 20 inches) deeper than the house floor. The spoil from both was piled around the perimeter. With the exception of the preceding comment from Okpik, I have no information on how these pits were dug, but any mattock-like implement with a hard birch or tough antler blade or a rough, sharp, stone slab blade probably would have sufficed. In addition, shrubs and roots must have been pulled by hand and loose dirt tossed out with an improvised board or bark shovel.

The Structure is Erected

Once the pit and tunnel were excavated, a small, short post was then placed near each corner of the excavation. These posts were between 65 to 85 cm high and were set quite close to the side wall -- to 15 cm (2 to 6 inches) out at floor level, but they were positioned about 175 cm (29 inches) from the end walls. To receive the medium-weight wall retainer/roof purlin log, the top of each post was bevelled and, in some cases, was cut with distinctive projections extending beyond the bevel, forming an eared notch (Pl. 15B). The purlin poles were trimmed and slightly notched to fit over the corner posts. These horizontal poles extended along each side of the house, from post to post and served as wall retainers as well as roof supports (Fig. 6.1). There appears to have been no comparable pole or retainer across the back wall. There the endwall poles extended from the floor to the top of the structure whereas the sidewall poles, described next, extended only to the height of the wall retainers.

The primary construction material was spruce. Birch, poplars (aspen, balsam poplar or cottonwood), large willows and alders of less than tree size also are available in the region, but birch and poplars decay very rapidly in moist ground, although the bark persists. Short poles or staves were leaned, slightly inclined inward, against the wall retainer to form the lower sidewalls. They were held in place by dirt fill. If the poles were much more than 8 cm (3 inches) in diameter they would be split into halves, which often was the case, or if very large they were quartered. Presumably, at an earlier time before metal axes had become available there was less trimming and splitting of construction material throughout the house.

Then, if not earlier, two pairs of main posts and ridgepoles were erected. These were deployed each side of the centerline, and were placed toward, although somewhat inward from, the front and rear walls of the house. Thus the term "four center-post construction" that I have used earlier (McFadyen Clark 1974) does not apply accurately. These posts were in line with the corner posts, which produced a well ordered floor plan, although differences between end and side construction resulted in a peculiar endwall geometry (see below). The posts were only 178 cm high (5 ft 10 inches) or less above floor level, although to this height should be added the thickness of the ridge poles. The endwalls, to be erected later, would incline inward towards the top, giving the house a somewhat pyramidal appearance. However, the construction format actually is a modified "twin ridge pole" type. Terms are defined and illustrated in Chapter 6. Although they were larger than the corner posts, the main posts were not especially heavy, and if logs greater than about 20 cm (8 inches) in diameter were used they would be split in half with wooden wedges. The tops of these posts were bevelled or notched, in the same manner as the small corner posts, to receive the ridge poles.

All timbers were sufficiently light that they could be handled by one adult. Undoubtedly, however, the head of the household had assistance in positioning posts and especially in cutting, trimming and laying the numerous roof and wall poles, in covering the finished structure, and for excavation of the initial pit. The roof poles were placed crosswise from the ridge pole to the roof purlin/wall retainer pole. About 45 poles were used on each side. Those at each end were relatively heavy; otherwise the roof poles were only slightly larger than those used for the side walls. If a pole were larger than necessary, over about 10 cm (4 inches), it would be split. Assuming that a roof pole and a side wall pole could come from the same small tree, the sides of the house would require about 90 small spruce trees, and another 90 poles would be required to enclose the front and back walls. Leftover sections from these trees would be used for the tunnel lining and to close the central portion of the roof; and, if they came from somewhat larger trees, butt sections would be used for posts.

Considering that some poles were split lengthwise, about 140 trees should have sufficed for construction. To obtain and prepare this material undoubtedly was a formidable task, requiring a major investment of effort prior to the time iron axes became available in the middle of the nineteenth century.

Ends of the roof poles were bevelled to fit snugly atop the longitudinal supports, i.e., ridge poles and purlin/wall retainers. This work apparently was done as each pole was fitted into place, inasmuch as chips or cuttings were found in the sand immediately under the living floor.

At this stage the framework for the tunnel enclosure should have been erected, while the working area was still relatively open, before the front wall was faced with poles. For this narrative, however, I shall complete discussion of the main room before turning to the entryway. After the lateral roof poles had been placed, the narrow space between the ridge poles still needed to be covered. A section in the center above the hearth was left open as the smokehole, but according to native consultants a removable smoke-hole cover was used when the fire was out. The rest was covered either with short pieces of wood laid crosswise between the ridge poles or by longitudinal poles supported by cross-pieces located on either side of the smokehole. This highest part of the structure, made up of relatively short pieces, had become completely disarranged during collapse, hence the uncertainty regarding details.

For the front and rear walls, poles were leaned upward from the floor to the edge of the roof. These usually were whole poles, not split ones. The amount by which the main and corner posts are inset from the edge of the floor, about 74 cm (29 inches) but variable, gives an indication of the degree of endwall inclination. This angle appears to have been flatter than that of the side walls. The fact that the edges of the roof had to partially support the inclined walls explains why the outer poles of the roof panel were heavier than the other roof poles. Inasmuch as the edges of the roof are inclined towards each side, except for a short span in the center, poles extending to the edge of the roof in a straight line would change in slope, getting steeper as the distance from the floor to the roof increased. If, however, the ends of the house were rounded, the slope of the endwall could be kept constant. Excavation data to support this concept are not adequate, but it was observed that corners of the endwalls were rounded, while the rest of the back wall was straight. The central part of the front wall was taken up by the entry.

The Entry

Of all parts of the structure, the entry was the most carefully examined because it was the most difficult to understand and to interpret. Details of the junction between the tunnel entrance and the main room are still unclear. Although at the Lake Creek site the entry could not be excavated because of frost, and at the Kayak house the lower layers of the entry could not be excavated for the same reason, good data were obtained from both Okak houses.

Two elements which help to determine the form of entry enclosure are a pair of short posts near the outer end of the tunnel or entry trench and the doubling of center posts near the front of the house. Usually the second set of front posts is lighter than the main posts which support the ridge poles, although this set was not invariably present or recognized. A tunnel trench about three meters long had already been excavated to a depth slightly below floor level before these sets of posts were erected. The inner tunnel posts were nearly as high as the main posts. Their exact position varies and sometimes they were positioned inside the main posts, thus assuring a thorough junction between the entry and the front wall. The height of the short outer posts governed the minimum height of the entry and the level at which warm air would be trapped. Although its base was below floor level, the entry trench was not deep enough to function satisfactorily as a cold trap. The only front passage post recovered with an intact end was about 80 cm (32 inches) high. This height would have allowed a person to enter by crouching, and after moving further into the higher entry passage it would have been possible for him to proceed by stooping.

Each set of posts was capped with a lintel, then long roof poles were extended between them. This step is inferred because of inconclusive information: an alternative reconstruction is noted in the next section. The entry roof sloped markedly towards its outer end, with a change in height of nearly 120 cm (about 4 feet). After the entry framework and roof had been constructed, the upper walls were formed with small vertical poles or stakes. These did not extend to the bottom of the entry trench but were set into a narrow shelf located along each side of the entry (Fig. 4.26 - 4.27). This shelf may have been the original ground surface, but that is not certain and it is probable that the entry trenches have slumped since the time of construction. The entry trench excavation probably was left unfinished, but like the rest of the structure, the walls and roof were covered with turf and dirt.

Finishing the House

After the superstructure was erected, and wall and roof poles were fitted into place, the entire roof was covered with a thin layer of sphagnum moss and then sheathed with birchbark. All seams in the bark were carefully sewn and knots or bad places in the bark were covered with sewn patches. Obviously, high priority was placed on making the roof waterproof. Tight roofs were a prerequisite for dry interiors, perhaps because heat from the hearths melted the snow that covered the dwellings, or because some occupation during thawing weather before departure for spring camps was anticipated. Bark shingling often was omitted from the sides of the entry. Turf placed with the outside surface turned inward probably was sufficient to keep that part of the house dry, although the occupants would not have wanted water dripping or sand sifting into the main room.

Very little finishing was done inside. Birchbark room separators or entry extensions were erected in the main room and extended as far in as the inner entry or main front posts. Native consultants said that the short partitions served to separate family spaces when the houses were occupied by two families (McFadyen Clark and D. Clark 1974). There was a center hearth, often with short logs or planks staked into place around it to retain the sand-filled hearth platform; and usually small boulders were carried in and placed near the hearth for use as heat retainers or other purposes. Ventilator shafts also were reported to have been installed in the front and back walls, but none were recognized during excavation.

On the outside, turf and soil or sand from the housepit excavation was heaped against the walls and over the roof to a thickness of many centimeters. I estimate that the original cover was about 20 cm thick, but after caving and the addition of flood silts as much as 40 cm or 16 inches were encountered during excavation. According to traditional information, both inner and outer ends of the entry passage were covered with skins -- usually brown bear. Little is known about the structure of doors, and no plank closures with round to oval portals were found as were used by the Ingalik Indians (Osgood 1940) and in the 1400 A.D. Ekseavik phase houses on the Kobuk River (Giddings 1952:26). There is no evidence of a shed at the outer end of the entry. Finally, to help make the house more comfortable, spruce boughs were taken inside and spread over the dirt floor. Over these were placed caribou hides. According to native consultants (field notes 1961; 1968-72), equipment and paraphernalia, other than that usually stored outside on racks, including hunting gear, parkas, mukluks and mittens, was moved in after a small ritual observance such as hanging a piece of burned dried fish in the entry.

Construction Detail

Discussion of certain details of construction is imperative in order to better understand how these houses were fabricated. Herein variation, and implicitly, uniformity, are emphasized. Specific observations are shown in Table 4.1 and its companion Figure 4.4, which is the key that defines the dimensions recorded in the table.

Floor Depth and Evenness

Although two sites had been flooded at least once, surface elevation probably has not changed significantly since the houses were built. Nevertheless, presence of a surrounding berm, surface irregularities and floor irregularities result in variable pit depth measurements. Discounting the berm, it appears that a depth of 60 cm (2 ft) is most representative. At the Kayak house actual floor elevation varied as much as 29 cm from place to place, the higher areas being next to the wall. The front of this house is slightly lower than the back, but on the whole the floor is only slightly irregular.

In House 1 at the Okak Site, the initial floor of the alcove, underlying a more definitive floor, was only 42 cm lower than adjacent bermless ground, and the main floor above it was 35 cm deep. In the central room, the top of the hearth mound was at the same level as the main alcove floor. The floor at the front and rear of this room was slightly deeper, 47 to 48 cm, and lowest at the sides -- 60 to 61 cm in the middle of each side, 51 and 56 cm at the front, and 47 cm at the rear corners. Floor depth in this house is uneven, but the differences are symmetrically patterned. One may wonder whether or not these differences relate to the manner in which the floor area was utilized and kept clean. Although in this house the corners are higher than the floor, at Lake Creek the nearly even floor was lowest in the corners and along the walls. Floor profiles thus vary among the three sites. Originally the hearth in the Okak house was nearly at floor level, with oxidized sand extending slightly lower; thus there appears to have been no mound or raised area in the center of the house. Subsequent elevation is due primarily to an accumulation of sand, not of hearth ash. I think that this sand was swept into the hearth from the sides, but the artifact and bone distributions do not reflect any excess central accumulation. Possibly they represent primarily the last season of use.

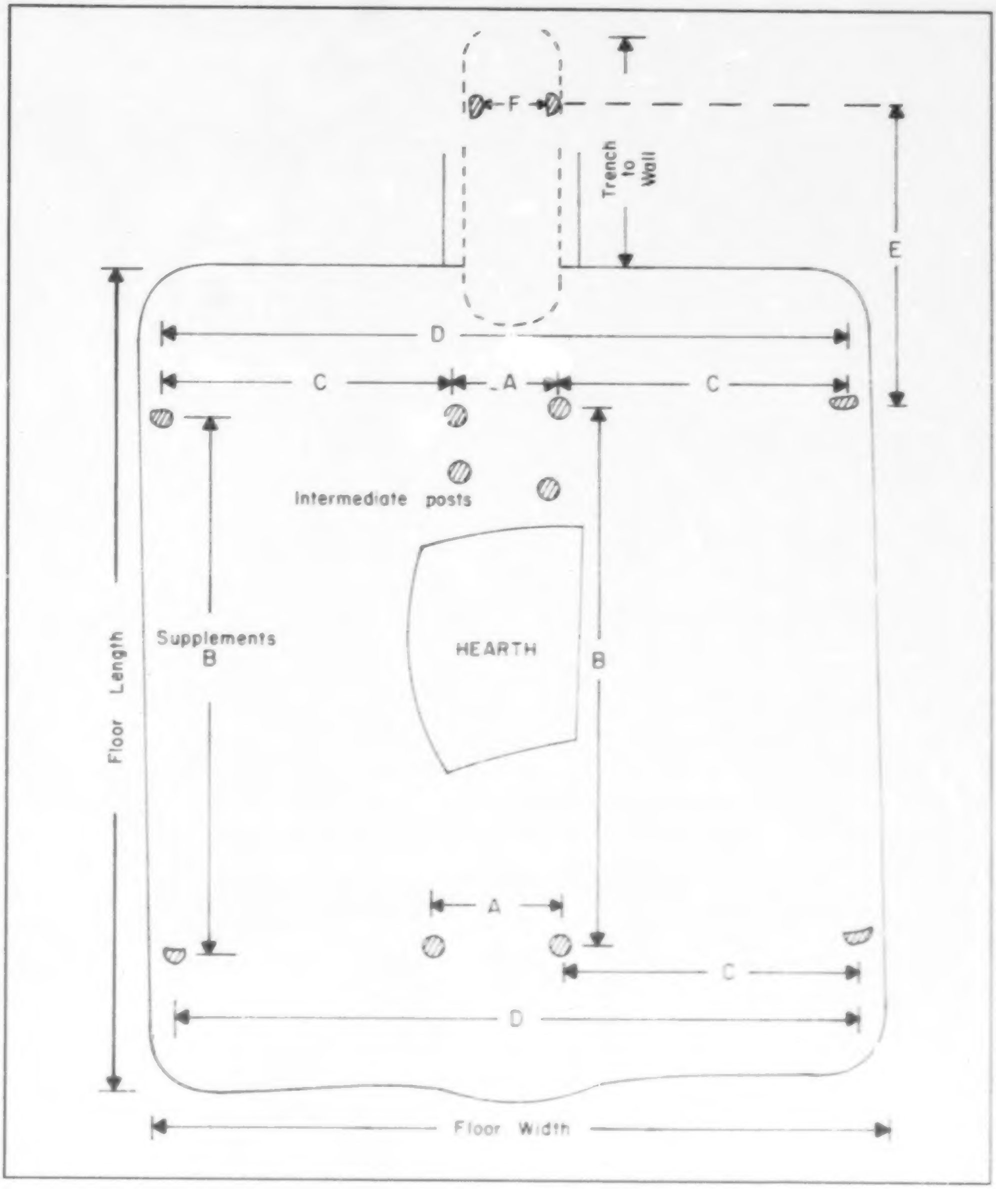

F
Trench to Wall
E
D
C
A
C
Intermediate posts
Supplements B
HEARTH
B
Floor Length
A
C
D
Floor Width

Fig. 4.4 Key to the dimensions recorded in Table 4.1.

TABLE 4.1. HOUSE CONSTRUCTION: METRIC ATTRIBUTES

Attribute	Lake Creek	Kayak	Okak 1	Other
Areas and Floor Size				
Floor width	4.95	4.8, *c* 4.25	5.6F 4.35Re	O 5.35*Re D 5.9F K 6*
Floor length	5.4	4.8	5.4 + alcove	O 5* D 4.3* K 4.3*
Floor area	26.7	21.7 alcove	26.8 +	O 26.7 D 25.4 K 26
Area between centres of corner posts	16.7	14.9	19.0	
Tunnel trench, exterior part	House 2 *c* 2.9	*c* 2.5	*c* 2.1	O 2.7
Tunnel trench, complete		2.8*		O 3.3 K 4
Depression size after caving	4.4-5*W 5.3*L		4.7-5.0*W 4.0-4.4*L	O 4.9-5.4*W O 4.8-5.0*L
Heights				
Main posts	1.61*LF 1.5*RF 1.71*LI 1.78*Re	*c* 1.5-1.6	*c* 1.65	O 1.46*F
Corner posts	0.73*	0.88*	0.8-0.88	O 0.65 &

Pit depth	0.6-0.7	0.66-0.94* below berm	0.8 below berm, 0.47-0.61 where is no berm	O 0.66*
Distances between Post Centers				
A. Main post separation	0.7F 0.85Re reliable	0.94F 0.6Re unreliable	0.84F 1.2Re un-	O 0.85F
B. Front to rear main posts	3.63	4.1 best 3.17	fit main	
Front to rear corner posts	Same as above	3.4-3.7	& corner posts	
C. Main post to adjacent corner post	1.92-2.02F & LR 1.75 RRe	1.65LF	1.7RF & LRe	1.5LF
D. Distance between corner posts	4.65*F 4.57*Re	4.3F, *c* 3.9Re	4.04F 4.7Re	
E. Main posts to outer tunnel posts	Not observable	2.5 ave.	2.45 ave.	O 2.8 Tilted
F. Outer tunnel post separation	Not observable	0.83	0.74*	O *c* 0.75
Posts are eared	No	Not observed	Yes	O Yes

Table 4.1 abbreviations: * = data recorded directly in the field. Otherwise, distances are scaled from field drawings; A through F distances in attribute column are keyed to Figure 4.2; L=length, W=width, F=front, Re=rear, LF=left front, R=right, RF=right front, LI=left intermediate; as used at the left side of each entry in the "Other" column, O, D, K=Okak House 2, Dosennaughten House 1, and house on the Koyukuk River, respectively.

Supplementary Data for Table 4.1: The top of a standing portion of the Okak House 1 wall extends above ground level, as also is the case at Dosennaughten House 1. I cleared the latter depression in 1961, but the floor layers were not excavated. The depression does not appear to have been reduced in area through caving of the walls. The Koyukuk River house (other column K) located upriver and across from Allakaket also showed little caving of the walls. Dimensions for it were paced and converted at one metre a pace to allow for a slight amount of caving. This house has a four-meter-long tunnel; the longest reported in this region.

At the Lake Creek house, front wall poles reached a maximum length of 188 cm, which, allowing for slope, indicates a height of about 1.7 m, a value that is in accord with post height, plus the addition of the ridge pole.

For the Kayak house, the longest front wall pole scaled from field drawings is 155 cm, which suggests a height lower than that at Lake Creek. It is unacceptably low and seems to indicate defective or incomplete data. Also at the Kayak house, the side-wall poles average 110 cm long, indicating a lower wall of nearly the same height. This value approximately equates to corner post height, with the diameter of the retainer log added.

Floors

As a primary context of artifact deposition, and as the investigator's principal contact with what was taking place in the houses, floors merit careful consideration. It has been suggested earlier that in at least one house patterned differences in floor elevation may reflect habits of occupation and housekeeping. Floors were covered with spruce boughs. Evidence of grass also was found at Lake Creek, and localized on part of one floor, some moss. By the end of each season's occupation, if not sooner, the boughs would have become dried, and when removed, they would shed needles. I doubt that the floors were swept clean very often, and evidence from other arctic and subarctic sites shows that floor accumulations often reached a foot in thickness. Yet, the needle and twig litter layer on the Koyukuk house floors is very thin, a fact supporting the concept that floor cleaning had occurred. As S.S. suggested (field notes 1968 - 72), floors may first have been covered with spruce boughs then over these may have been placed caribou skins. If this were the case, the skins would have facilitated cleaning because they could be taken out from time to time to shake the dirt from them. Between 1961 and 1972 a similar practice was still in effect. I observed that many local Koyukuk residents still continued to put spruce boughs on their camp floors then cover them with caribou skins for added comfort -- a practice that I, too, began to imitate.

In two houses floor accumulation was about one cm thick, although in places it was less, and at the rear of the Kayak and Okak houses the total floor thickness, including a thin sand separation, was almost four cm. At Lake Creek, however, the accumulation of needles, grass and other material reached a maximum thickness of six cm. The conclusion is that, if the floors were not cleaned at least occasionally the houses must represent only a few seasons of occupation; or, as mentioned earlier, they were covered with skins. There is little refuse accumulation in corners and at the edge of the floor, reinforcing the conclusions drawn on the basis of the thinness of the floor layers. However, the floors evidently were not swept prior to the abandonment of the three houses, although the Kayak house was relatively free of animal refuse bones. There appears to be no facile explanation for the differences in condition of the three different floors. Aside from this, it might be noted that the needle litter in the Kayak house runs under the wooden hearth retainers. This suggests that these retainers had been replaced, and that the hearth evidently had been refurbished, sometime later during the course of occupation.

Partial flooring, consisting of four planks, was found along one side of Okak House No. 1. There also was a plank in the entry passage. These were relatively thin, only slightly more than two cm thick, but their thinness may be due to deterioration in the ground. By the time they were excavated, rootlets had grown into them and their original surfaces had been completely lost due to decay. The planks appear to have been essentially in place, even though they had been floated at least once during a flood judging from the presence of five cm of silt deposit between the boards and the natural floor. The production of these planks represent an investment of time and effort, therefore they should not be regarded as a casual addition to the floor. But what their purpose was, I am not certain.

The Superstructure

Within the housepit a superstructure was erected. Even as low as they were the side walls projected slightly above the original ground surface, although this would not have been apparent from the exterior because of the turf and sand covering. The height of the side wall equates to the height of the corner posts with the diameter of the wall retainer or roof purlin added, minus the notch depth. This height permitted a person to sit back against the wall but not to stand or stoop there. It is possible that the height of the wall was engineered with sitting height in mind.

Even the central areas were too low for most adults to stand upright in. Posts (Table 4.1) are short: In order to determine headroom, to the height of the posts add the diameter of the ridge pole but subtract the thickness of any floor cover. Accordingly, for the Lake Creek house a height of about 1.9 m at the rear, and 1.7 m at the front is indicated, assuming that the front height was not raised by the presence of a cap across the posts. Considering the lower height of the sides of the room and the fact that not all the central area was usable, most of a person's life inside must have been spent sitting, kneeling or reclining. It is surprising, then, to observe that the posts at other house sites were even shorter than those at Lake Creek. Some measurements, determined either by scaling from drawings or measuring in the field, may not be completely reliable, but all equal or are consistently lower than the Lake Creek measurements. In Okak House No. 1, for example, front post height is estimated at 1.65 m, plus the ridge pole diameter of about 15 cm. Where observed, posts were sunk only a few cm into the ground below floor level. Most stubs or posts were left in place at the conclusion of excavation.

Dimensions given in Table 4.1 are not always as accurate as the cm level of recording suggests.

This is because some posts were tilted, displaced, or poorly preserved. The strong patterning of construction permits one to predict where particular structural elements will be found and thus to adjust for missing data or disturbances. However, measurements that appear to be inconsistent or wrong should not necessarily be "normalized." For example, the close setting of the rear posts in the Kayak house and the wide setting of the rear posts in Okak House No. 1, relative to their respective front posts, may be correlated with the narrower width of the rear of one house and widening at the back of the other house.

Earlier it was pointed out that different structural principles were used to form the sides and the ends of the houses. Posts were set close to the base of the side walls but were much farther in from the end walls. Slight variations in these proportions may be seen in the floor plans.

Except for wall and roof poles, few specific sizes of structural members have been given. Posts were not particularly large, as can be seen from the following measurements:

Corner posts:
Lake Creek -- split logs, 19 & 20 cm diameter
Lake Creek -- hewn on four sides, 6 cm thick
Okak No. 1 -- split log, 15 cm diameter by 7 cm thick; ears project 8 cm above 9-cm-wide notch
Okak No. 2 -- split log, 14-15 cm diameter by 6.5 cm thick

Main posts:
Lake Creek -- front, whole logs, 13 and 13.5 cm diameter
Lake Creek -- intermediate, whole logs, 12 cm diameter (2 posts)
Okak No. 2 -- front, 19 cm diameter by 10 cm thick; 16-cm-wide eared notch.

Wall retainer/roof purlin:
Okak No. 2 -- 10-12 cm, irregular and partially hewn; this size applies to most houses.

Superstructure Poles

Earlier, a conservative estimate of the number of spruce poles required was presented. A few small size trees could supply the posts. Substantially more trees were needed for splitting or for lighter poles to line the walls and make the roof. At Lake Creek an actual count shows that 37 unsplit poles were used in the front wall between the entrance and one corner, that there were 46 or more roof poles along one side covering the length between front and rear posts, and that 41 or more were used on the other side between the intermediate and rear posts. The lower wall poles along one side of the Kayak house were partially counted and partially estimated: superposition, disturbance and decay complicated counting. The results from this type of estimate yielded between 50 and 55 pieces.

Bark Roofs and other Uses of Bark

Bark sheets often were found curled up in the surface litter filling the house pits. These apparently had covered the roof or had become exposed prior to collapse of the structures, when covering turf and dirt had slid off to the sides. Initially, I considered that such superficial bark might have originated from a canoe placed on the roof, as de Laguna reported at Kateel (1947:51), but now I believe that this is extremely unlikely. Flat roof area suitable for storage that would not interfere with the smokehole was limited. It is likely that canoes were placed on racks, usually not at the winter house, and preferably under a large spruce tree so they would be less susceptible to damage from a heavy snow load (field notes 1968-72).

Other birchbark sheets were found in place under the dirt cover directly on top of roof sections that had collapsed intact. For clarity these have been deleted from the excavation drawings shown in this study. While the top of the main room was completely and carefully shingled, the nearly vertical lower sidewalls do not appear to have been sheathed with bark, and in only one instance was birchbark recovered along tunnel walls.

Bark recovered from the Kayak house was shipped to Ottawa and examined there before part of it was discarded; but at Lake Creek, sketches were made of the birchbark pieces then most of them were discarded in the field. Samples from these two collections are illustrated in Figures 4.5 through 4.15. Several different types of stitching were observed, e.g., some that were used only for patches. Additional types used for basket construction are described in chapter 5. Several sheets had curved edges, or curved stitching hole lines, but unfortunately I did not find out how the curved pieces were used. Perhaps they were cut in this manner to facilitate bending pieces around corners at the inclined intersection of the end walls and roof. Single rows of stitching holes ran vertically, up/down slope as observed in the field, especially in some Okak and Lake Creek house sheets. Horizontal stitching hole rows were both single and double. A double row located well inward from the edge of a sheet is complemented by a single row of holes placed near the edge of the overlaying bark sheet, as observed *in situ* at Lake Creek (Fig. 4.5, C) and results when the edge of one sheet is sewn onto the face of another. Hole spacing varies: on one Lake Creek sheet it was 8 mm along two edges and 16 mm along the other two alternating edges. Sheets were seen sewn together in the manner of shingles with their greater dimension running horizontally. One shingle from Lake Creek was 107 cm long and 41 cm wide, but others were not quite that large. The grain of the bark was oriented either vertically or horizontally. At both Lake Creek and the Kayak house we found very narrow perforated strips of bark which evidently were used to reinforce the edges of some sheets, or were used as an interleaf at a seam. Different stitching patterns are present on shingles, while yet others are recognized in bark from interior features located near the entry.

Recognition of entry partitions was a process of discovery that occurred as we attempted to understand crushed elements of birchbark and aligned stakes found at the entry to the Lake Creek house. Later, use of front interior partitions was confirmed by consultants at Huslia, and as well is reported by Jetté for the Yukon branch of Koyukon (de Laguna 1947: Fig. 21 lower). This feature is an interior projection of the walls of the tunnel. In the excavations, it is best recognized at Lake Creek where it is present on both sides of the entry (Fig. 4.5, 4.8). Apparently it is also present at Okak House No. 1, where some bark was found wrapped around a secondary post near the front. There are no undisturbed standing features to illustrate this element of construction, but attention is drawn to the stake pattern in the Lake Creek floor (Fig. 4.18) and to the birchbark, bound between half-round splints (Fig. 4.6) that comes from this feature at Lake Creek. Bound birchbark of the type illustrated was found at the left side wall one-third of the distance back from the front wall, at the point where the left front wall joins the tunnel trench which protrudes into the house. This bound bark feature is obviously part of the entrance structure. At one location many sheets with an aggregate width of 3.5 m were accumulated on top of one another. These may have been upper and lower sheets that were used to form a partition. We actually recovered one 49 by 65 cm folded sheet of birchbark that had been stitched onto other birchbark, although how or if this piece formed part of the entry partitions was not determined. The bark and stakes found at the right side, viewed facing into the house from the front, define a small "dog-leg" setting off a narrow 25-cm-wide niche.

A few unmodified sheets of birch bark, lacking stitching holes, also were recovered. These occasionally were associated with sewn sheets, but also were found on the floor at the Kayak and Okak houses. A rectangular piece found with the planks at the Okak house measured 47 by 83 cm. It showed no signs of abrasion or cut marks and may have been raw material. Three unsewn pieces from the Kayak house are not birchbark but may to be poplar. One of these is a 34 by 40 cm rectangle folded over once.

These remains show a varied and skilled commitment to working birchbark. In both the careful shingling of the roof and the construction of interior entry extensions, the occupants display a commitment to their homes that is surprising considering reports that this type of house was occupied only briefly, for a few months only on the Kobuk River (Giddings 1952), and then abandoned. I believe that, on the basis of the care that went into the Koyukuk houses, even to the extent of sewing patches over knot holes, these houses were intended for extended use over many seasons.

Interior Furnishings

The hearths, raised and sometimes boxed, are shown in the floor plan figures. A few cobbles were found in each house, and most of those at Lake Creek were placed around the hearth. Two of those at Lake Creek show large areas stained with red pigment. I noted earlier that there were planks in the Okak I house and that there was organic litter residue on the floors, probably left from their former spruce bough covering. A number of relatively heavy short logs were found in the rear center of the Lake Creek house. One of these overlays floor litter and thus apparently is in a secondary position, but the other logs are underlaid only by sand and they appear to be original furnishings. They seem to have taken up valuable floor space, but neither local consultants nor I are aware of their function. There would have been no stools, benches or tables in the original repertoire of Koyukuk furniture. A few stakes or stake moulds were found in the floor of the Okak house, and many more were found in the Kayak house. Some of these held the hearth retainers in place. The reason for the others is not understood but I can envision interior racks and props. At least three slender poles that do not appear to be structural elements were found on the floor of the Kayak house. These could have been used as racks or bars for hanging damp skin clothing, although this is unlikely inasmuch as several consultants, including EB and ON, Sr., told me that damp clothing such as parkas, mukluks and mittens were hung outside to freeze dry. Once the moisture on the skins and furs had frozen it was easy to remove it by shaking the garments. In addition to props and racks, some of the holes close

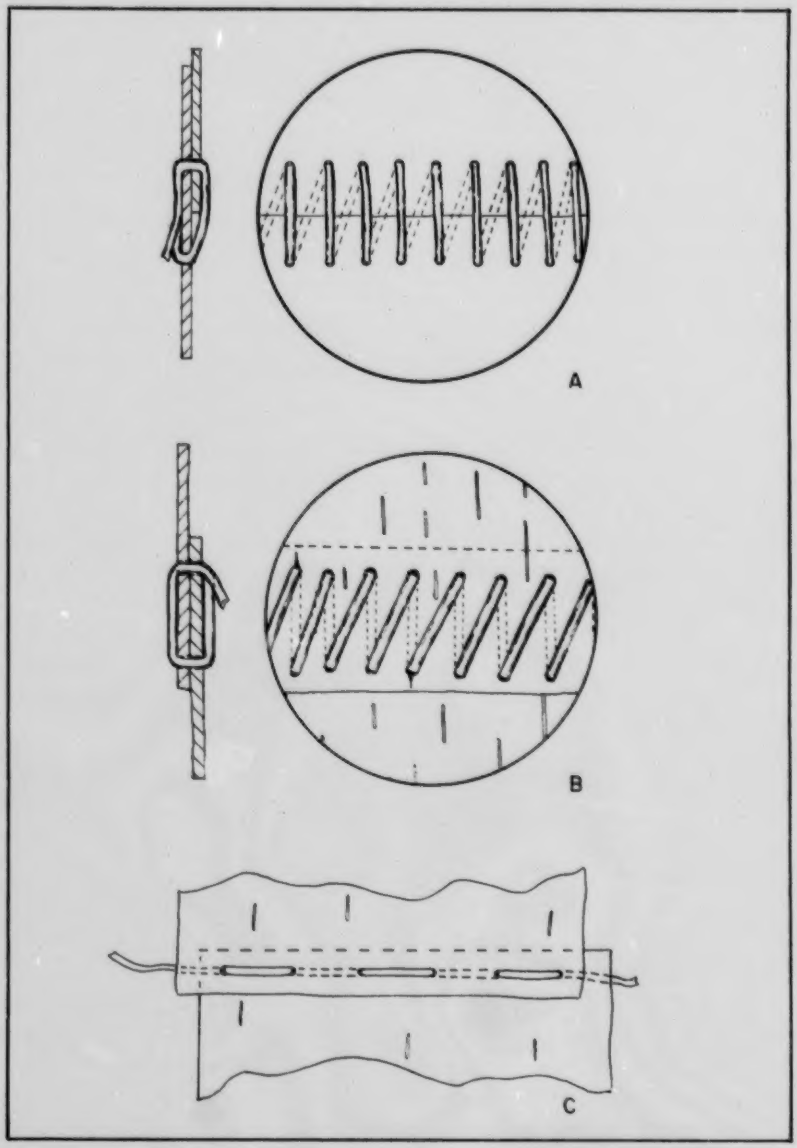


Fig. 4.5. Birchbark stitching types, enlarged.

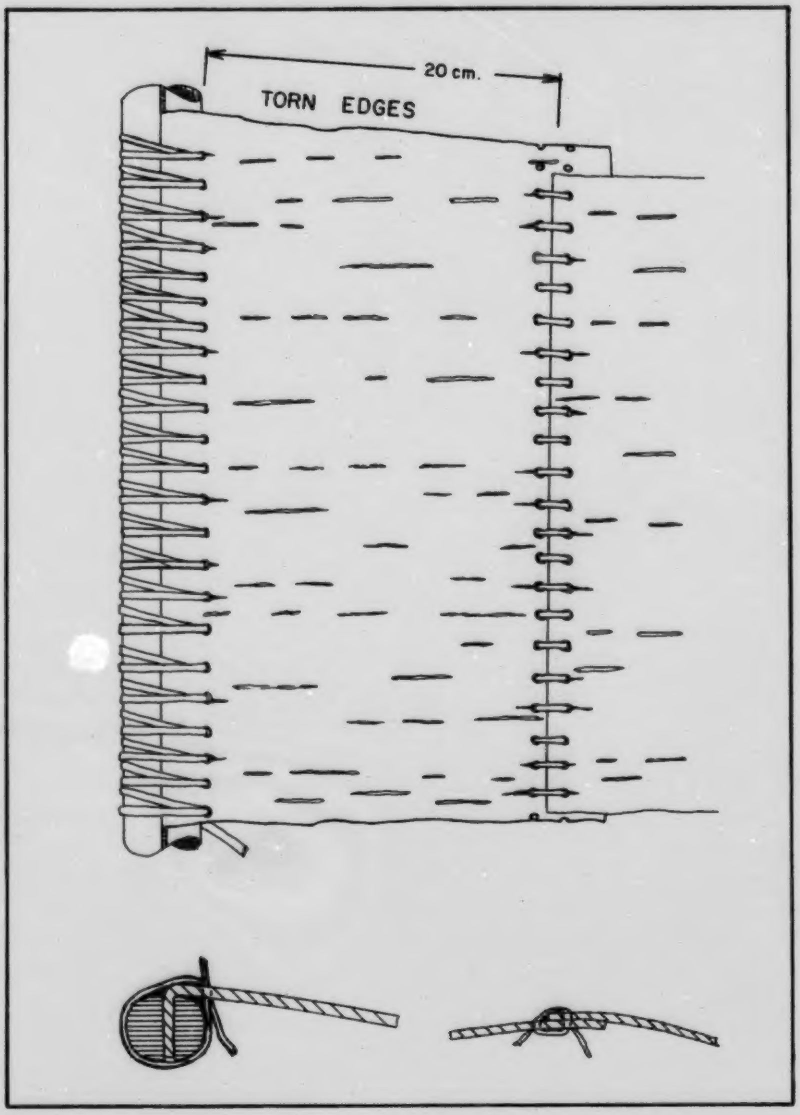

20 cm.
TORN EDGES

Fig. 4.6. Birchbark lashed to prepared half-round wooden rods.

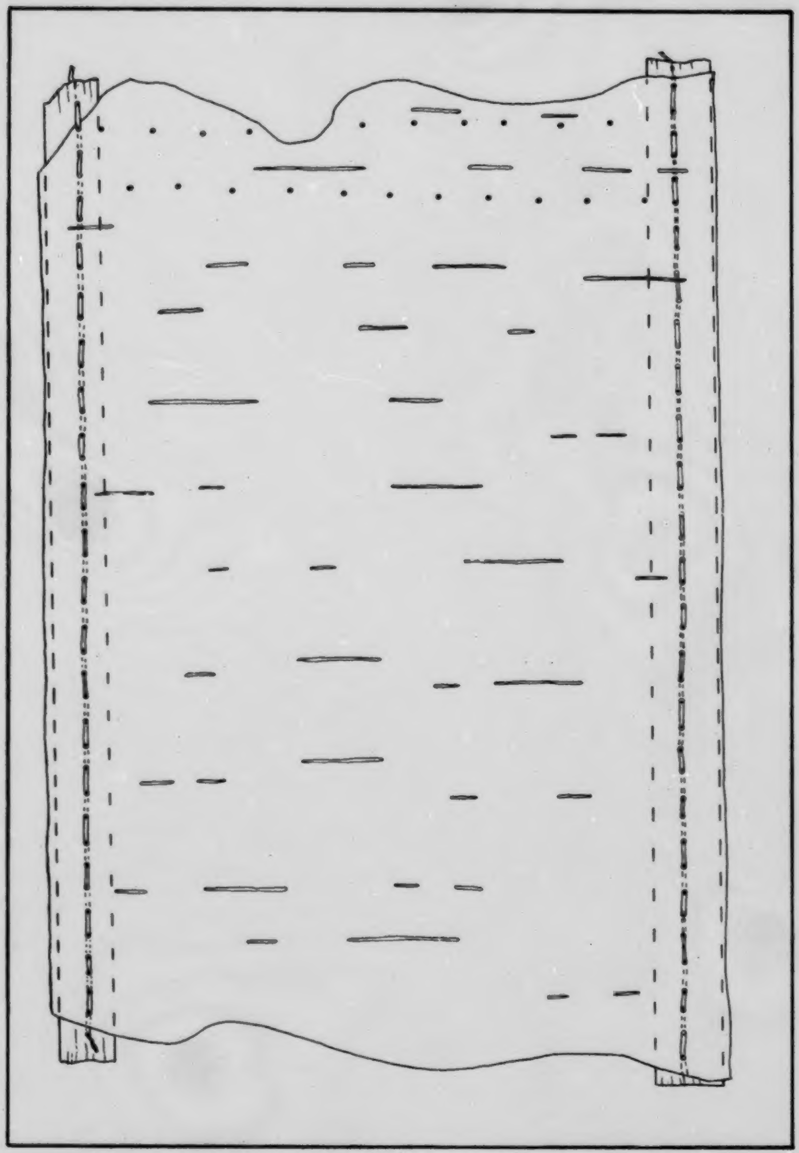


Fig. 4.7. Double sheet with intervening bark strips. About one-quarter natural size.

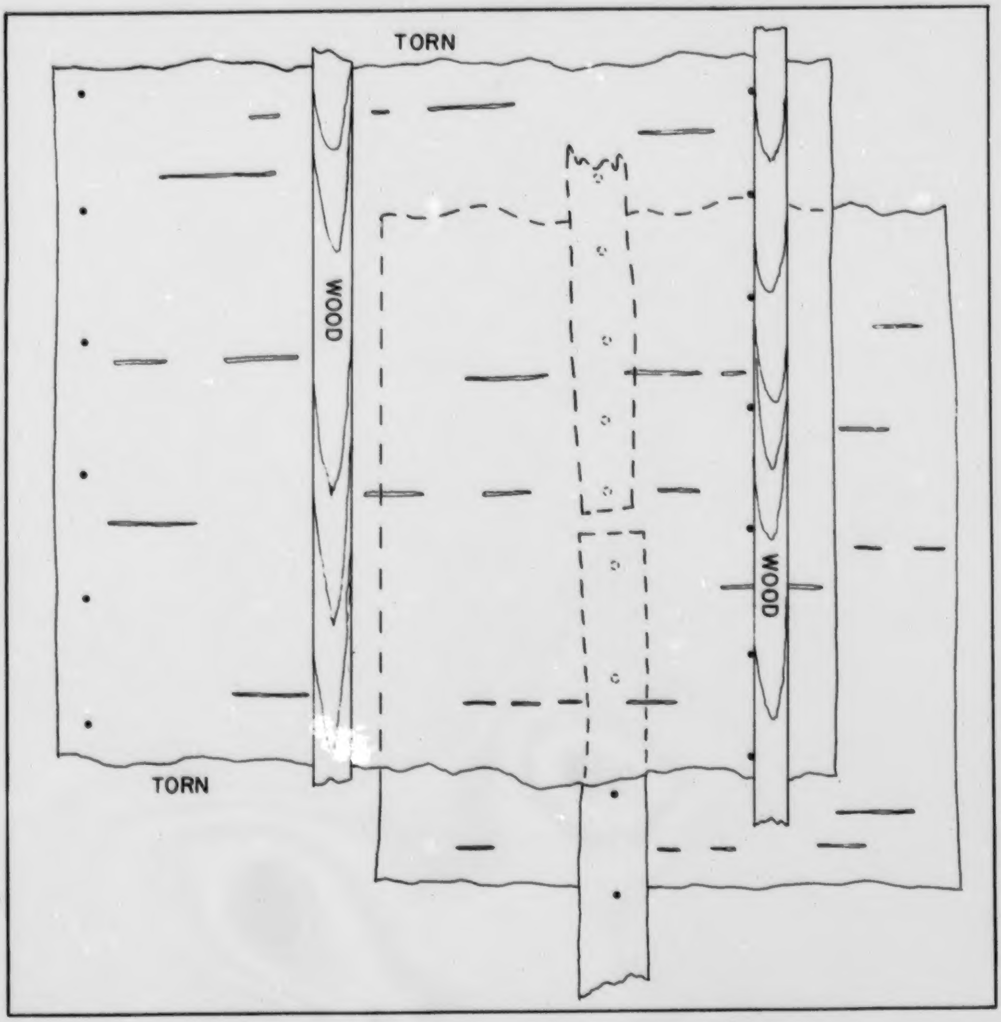


Fig. 4.8. Wood strips and bark sheets from the entry interior extension--wall divider, Lake Creek. The underlying sheet has no sewing holes. One-fifth natural size. The left sheet is 60 cm wide.

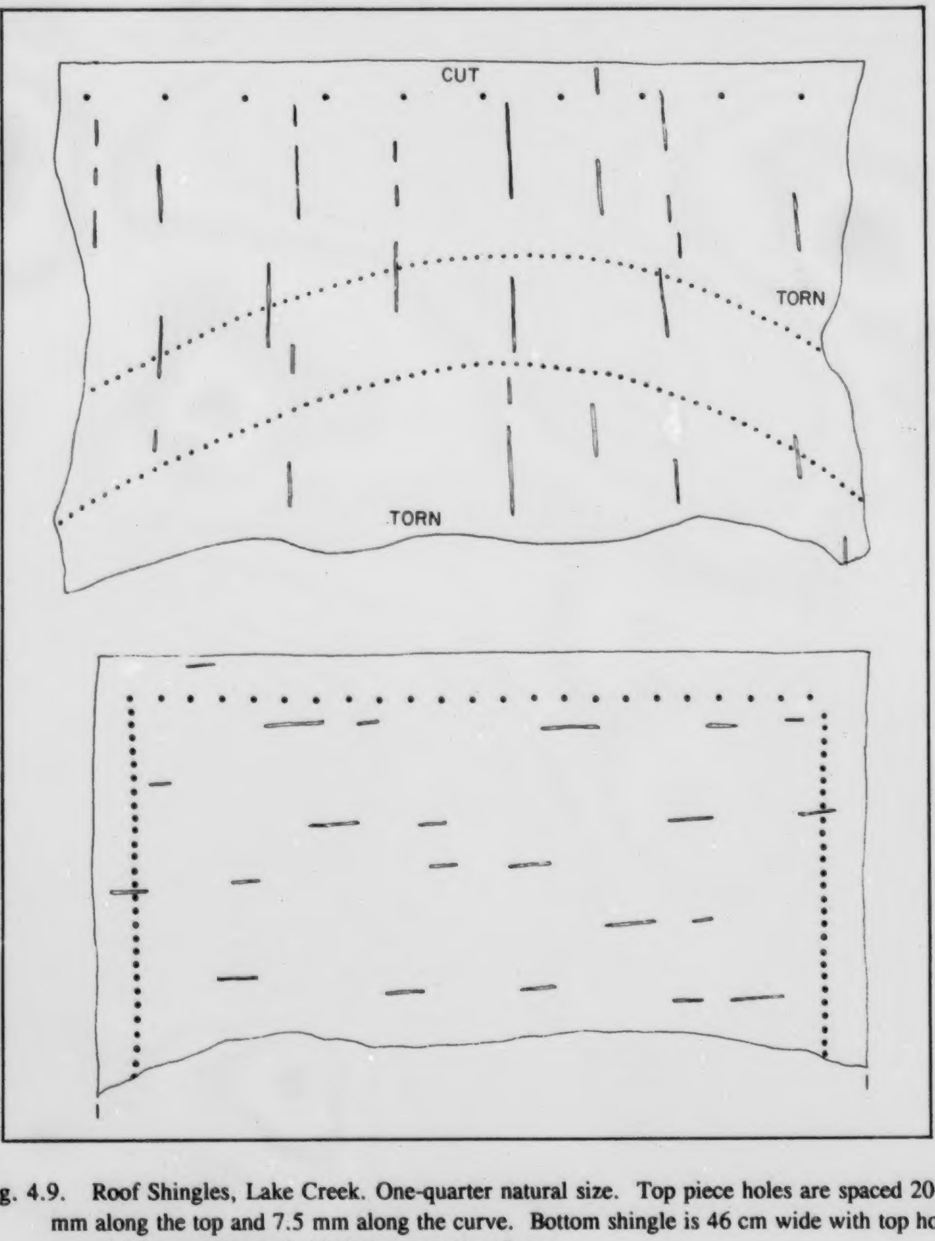


Fig. 4.9. Roof Shingles, Lake Creek. One-quarter natural size. Top piece holes are spaced 20-52 mm along the top and 7.5 mm along the curve. Bottom shingle is 46 cm wide with top holes spaced 16 mm apart and side holes spaced at 8 mm.

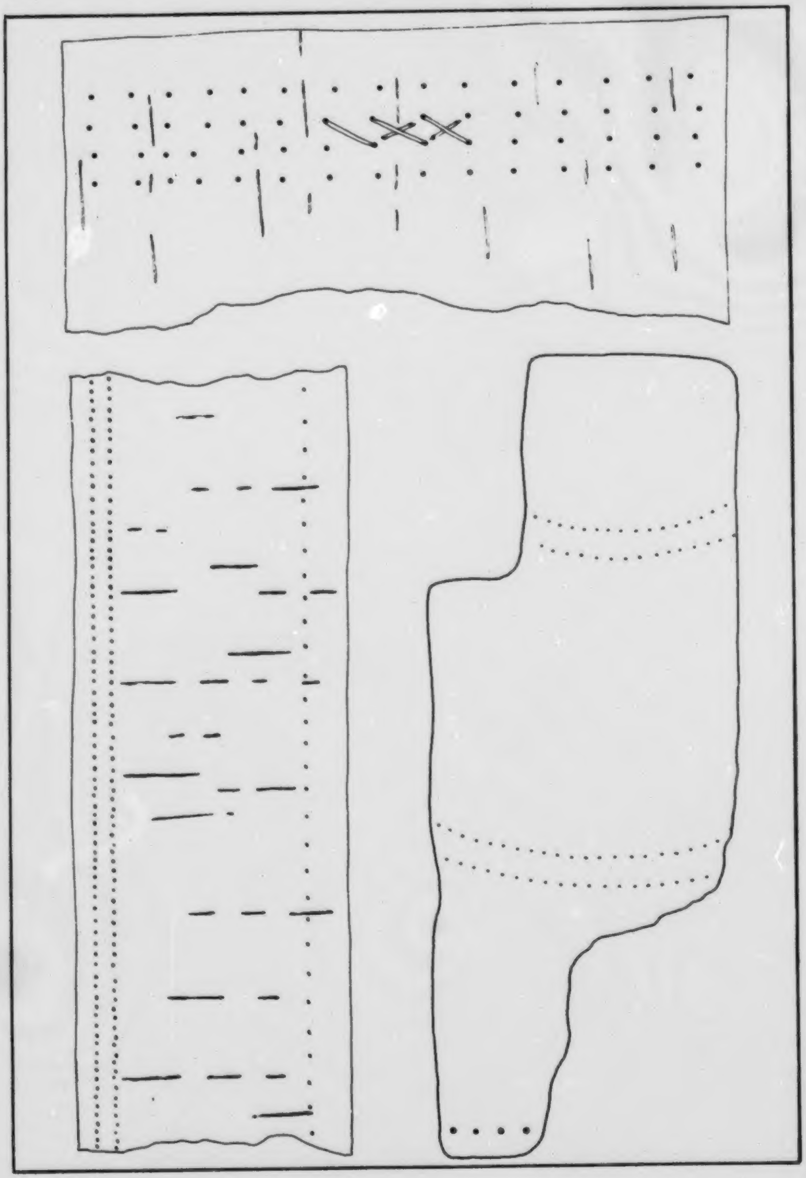


Fig. 4.10. Roof shingle or roof cover fragments. One-quarter size. The top one is 43 cm wide.

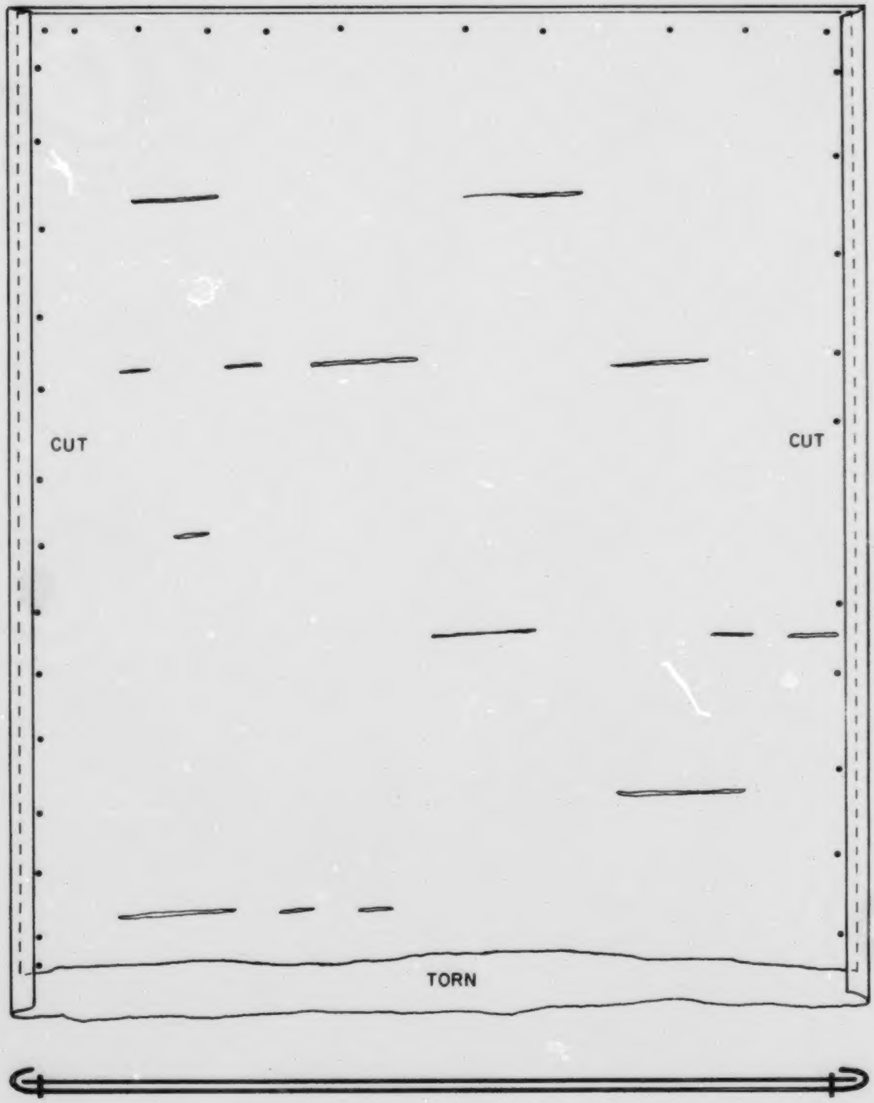


Fig. 4.11. Double Sheets of sewn birchbark, Kayak House, from the interior at the right side of the entry. One-quarter natural size. The unit is 59 cm high (incomplete).

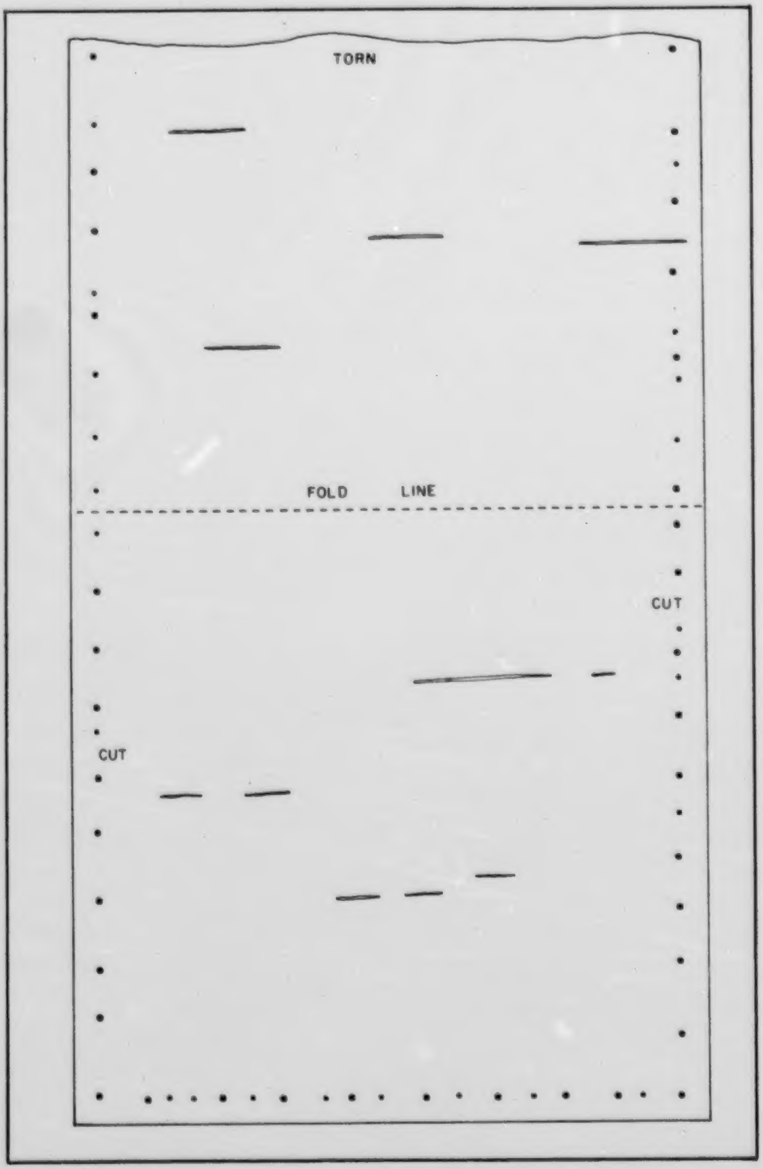

TORN
FOLD LINE
CUT
CUT

Fig. 4.12. Birchbark sheet, originally found folded double, Kayak House near entrance. The sheet is 78 cm high and 45.5 cm wide.

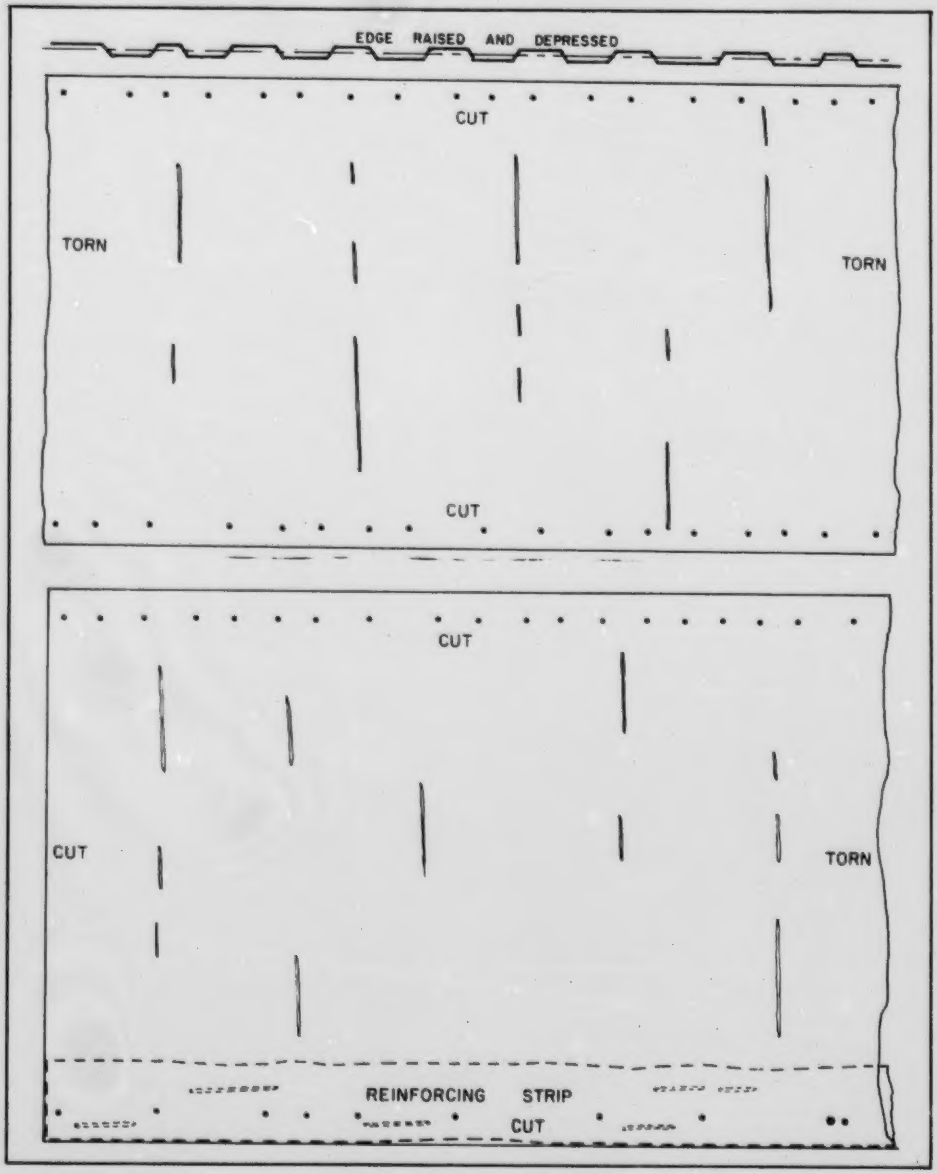

EDGE RAISED AND DEPRESSED
CUT
TORN
TORN
CUT
CUT
CUT
TORN
REINFORCING STRIP
CUT

Fig. 4.13. Birchbark roof cover fragments, Kayak House. One-quarter natural size. Top sheet is 53 cm wide (incomplete) by 30 cm high.

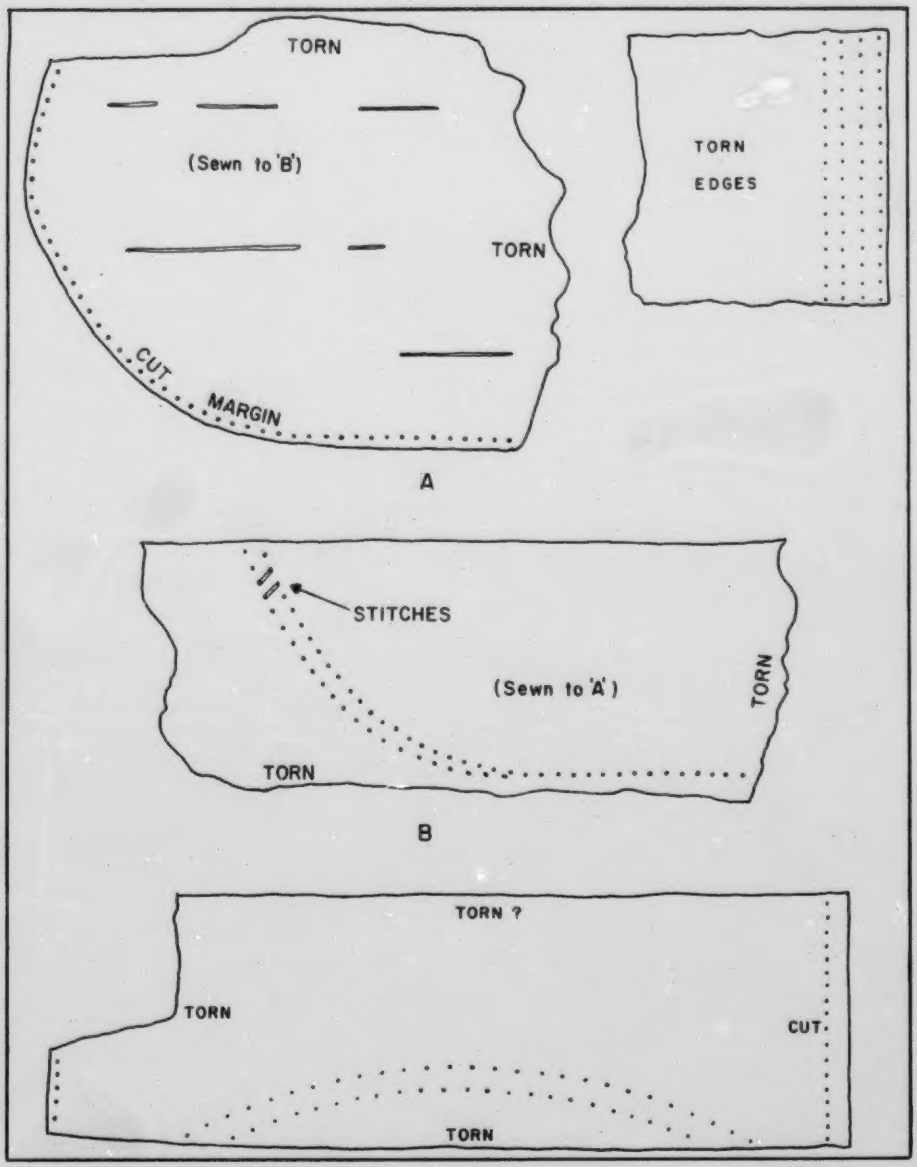

TORN
(Sewn to 'B')
TORN
CUT
MARGIN
A
TORN
EDGES
STITCHES
(Sewn to 'A')
TORN
TORN
B
TORN ?
TORN
CUT
TORN

Fig. 4.14. Sewn birchbark, Kayak House. Bottom specimen is 14 cm high by 44 cm wide; sewing holes spaced 9 mm to 12 mm apart. Top right fragment is 15 cm high.

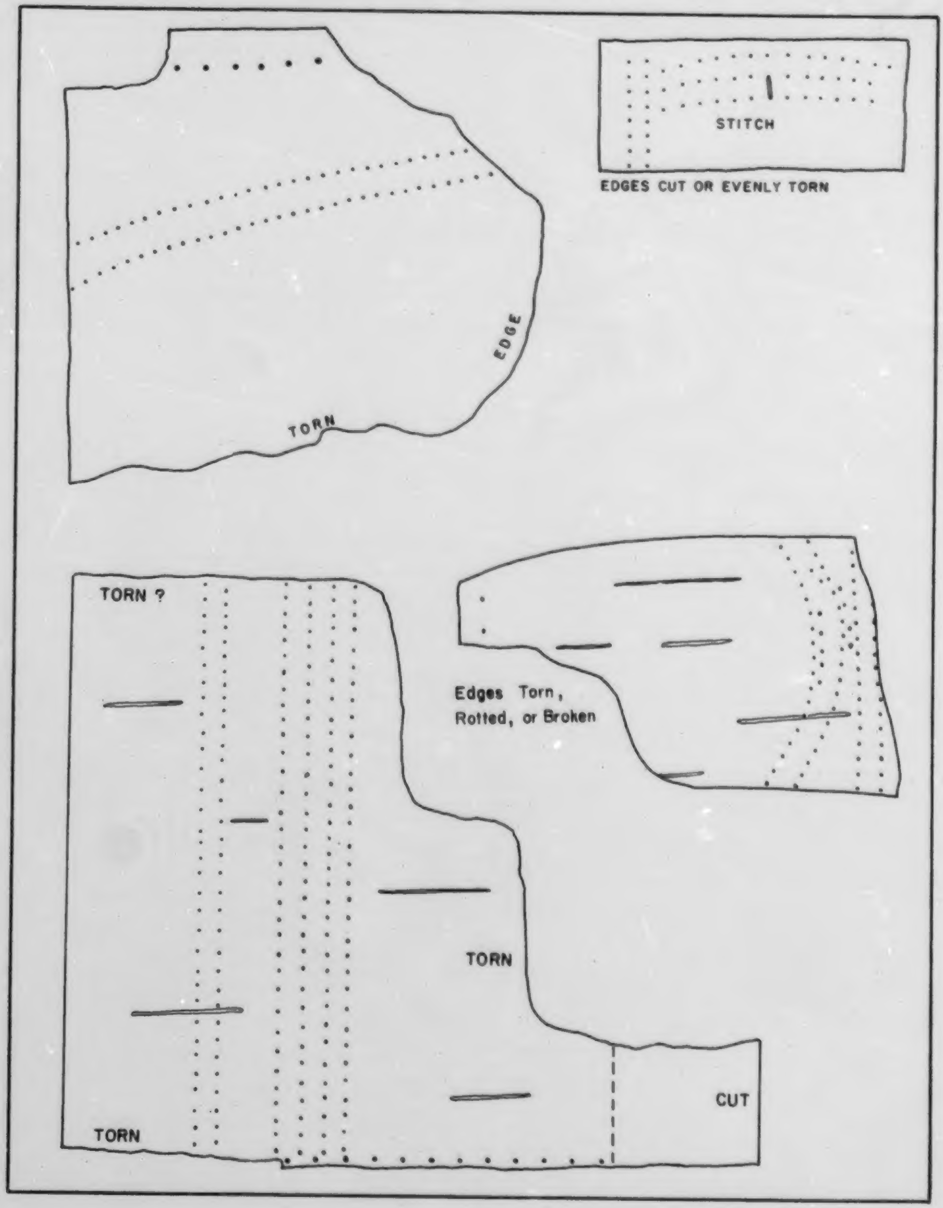

STITCH
EDGES CUT OR EVENLY TORN
EDGE
TORN
TORN ?
Edges Torn, Rotted, or Broken
TORN
CUT
TORN

Fig. 4.15. Sewn birchbark, Kayak House. Bottom specimen is 36 cm high by 44 wide.

to the hearth were from skewer sticks used to roast meat and fish over the fire (field notes 1968). At the Lake Creek house there also were stakes and holes in the floor, but these belong to the entry wings discussed earlier or held hearth retainer logs in place.

Entry Passageway

Some aspects of entry construction have not been resolved, although the caved remains were constantly undergoing interpretation during excavation. Figure 4.2 shows a low, flat-roofed, entry passage, while earlier I proposed a sloping roofed entry lowest at its outer end. Slope of the entry roof and how it joined the main room are questions which remain to be explicated. On the basis of field observations and the details represented in Figures 4.22 and 4.26, I can nevertheless point to several constant construction features:

- A trench was excavated somewhat below room floor level, 40 cm for instance.
- Outer entry roof support posts were erected in the trench near but not at its outer end. These were oriented to receive a cap. One recorded post was about one meter high, but data on others are lacking.
- Light-weight vertical stakes were used to form the entry walls. At one location these were observed to be 78 cm high but elsewhere they were too badly decayed and distorted for good observation.
- The wall stakes originated not from the bottom of the trench but from a shelf along the sides.
- Several longitudinal poles were uncovered. These probably are from the entry roof.
- The trench extends a short distance into the house.
- There is no evidence of inner entry posts in close association with the trench.
- However, farther into the house there are posts more or less in line with the main posts -- i.e., ridge pole supports. Their size and distance into the room is variable, and they are not always present. At Lake Creek it is not clear which posts are the main ones and which are secondary, but I suspect that the somewhat lower outer posts were entry supports.
- A pair of long poles is found at the sides of the entry trench. These could have extended from the outer trench posts to the inner posts.
- There is a mass of rotten poles from the entry superstructure and from the front of the house that complicates excavation and interpretation.

The preceding elements are almost sufficient to define the construction, and can be used as a guide for interpreting the illustrated reconstructions. It must be emphasised, however, that a certain amount of interpretation has been used in developing these reconstructions and that the data are not uniformly present or consistent.

Other Site Features

A small pit was located in front of the Lake Creek houses. Pits and a larger depressed area were observed near the Kayak house, but there was insufficient time to excavate them. Two pits associated with Okak House No. 1, however, were excavated.

Lake Creek

The small pit in front of the two Lake Creek houses was 31 cm deep and 56 cm in diameter near the base, after removal of its partial fill of burned rock and charcoal. Although the charcoal and fire-altered rock may indicate that the pit had held a fire, no actual ash was present nor was the sand matrix oxidized from "burning." More or less similar pits have been used recently to hold smudge fires for smoking hides. The pit appears to be too small for a stone oven, although I lack data on these which reportedly were used on the Koyukuk. Irving reports similar pits at Punyuk Point (1964).

Okak Site

Two pits at Okak House No. 1 may have been cache pits for cold storage of food, although they lack rounded ends or sides as seen in some cache pits elsewhere. No bark was found in the pits and in this manner they also differ from cache pits excavated at Hahanudan Lake (D. Clark 1977). One Okak pit had been used secondarily for refuse disposal.

Several layers of silt and organically stained sediment were found in the larger pit, but no artifacts or refuse were present. These layers probably are derived from material that had sloughed from the sides at various times and had become interspersed with layers of decayed organic litter that had collected in the pit. This pit at Okak is located several meters to the side of the right front part of the house.

A smaller pit, which is 110 cm long, 95 cm wide and, like the preceding one, approximately one meter deep, is located a short distance to the side of the front left corner. This one contained a number of fragmented faunal elements, a few whole hare bones and some rotten wood, a crooked knife blade and a scrap of can metal. Bone fragments from this pit fit fragments from Okak House I, thus tying this feature to the late occupation of that house.

Explication of Excavation Figures

The following details either interpret excavation figures 4.16 - 4.27 or provide supplementary information for aspects of the excavation which are not illustrated. A number of these figures form sequential sets and can be used as overlays.

In order to simplify the drawings, birchbark has been excluded and poles are shown semi-schematically, not in full numbers. No attempt was made in the field to draw each individual piece of wood, larger posts and beams and isolated pieces excepted.

Figure 4.16 - 4.18: Excavation of Lake Creek House No. 1, Higher, Lower and Basal Elements

The Lake Creek house was not heavily banked with sediment and some structural members and birchbark sheets were exposed. For example, it was possible to reach through cavities from the surface and feel boulders located on the floor at the hearth.

The ridge pole with a notch for locking onto a main post is considerably broader than the others. Perhaps the somewhat disintegrated beam had become distorted lying on the ground. Attention is drawn to the relatively heavy 8-cm-diameter poles that run diagonally from the centre of the house to the right and left front corner posts. One of these is partially hewn. These may have been end pieces of the roof sections. The apparent left ridge pole overlies roof poles. Evidently the roof section began to slump, the main posts shifted enough to let the roof collapse, then the ridge pole fell in later. At this house the lower side walls largely remained standing. The wall retainer/purlin poles had collapsed and lay superimposed over the roof poles. This again shows that the roof evidently shifted and collapsed before its supports collapsed. A similar mode of collapse may have occurred at Okak House No. 2, where the broken retainer pole was still in place on one notched corner post. At Lake Creek the end walls were the last to collapse.

Lower side walls are lined with split pieces of wood while the end walls are made up of whole poles. Sheets of birchbark were found in place on the roof side panels where they were almost undisturbed, but elsewhere there was a jumbled mass of curled bark sheets.

Figures 4.19 - 4.22:Excavation of the Kayak House, Upper and Lower Structural Elements, Entry

A few light-weight poles that are not shown were found above the roof. Their origin is imperfectly understood, but they do not appear to have been part of the house structure. Some of these superficial poles are partially burned and may represent half-burned firewood that had been removed through the smoke hole before sealing the room for the night. This explanation would be consonant with oral tradition.

Roof poles and birchbark sheets were buried under silt and sand, but additional poles and birchbark, distinguishable from those noted in the preceding paragraph, were barely covered. This appears to be the result of differential collapse of the structure. In addition to dirt intentionally placed on the structure, there was further silting due to flooding.

The sides and adjoining roof poles collapsed before the end poles. The latter therefore are shown in the upper elements of Figure, 4.19. Decay is more advanced at their outer ends, while the inner ends of these poles, especially near the walls, were still deep in the ground and well preserved at some locations. When the roof collapsed, which appears to have been concomitant with the collapse of one wall, the wall retainer and wall on the right side of the figures, together with the roof section on that side, apparently shifted toward the center of the house. The wall retainer/purlin along the other side did not shift and most of it decayed in place. Only bases of the lower wall stakes, together with the decayed retainer/purlin pole, were recovered from that wall. No ridge poles have been recognized for this house; and not all poles for the other houses have been unequivocally accounted for. Because these are the highest elements in the structure, ridge poles may be subject to the greatest

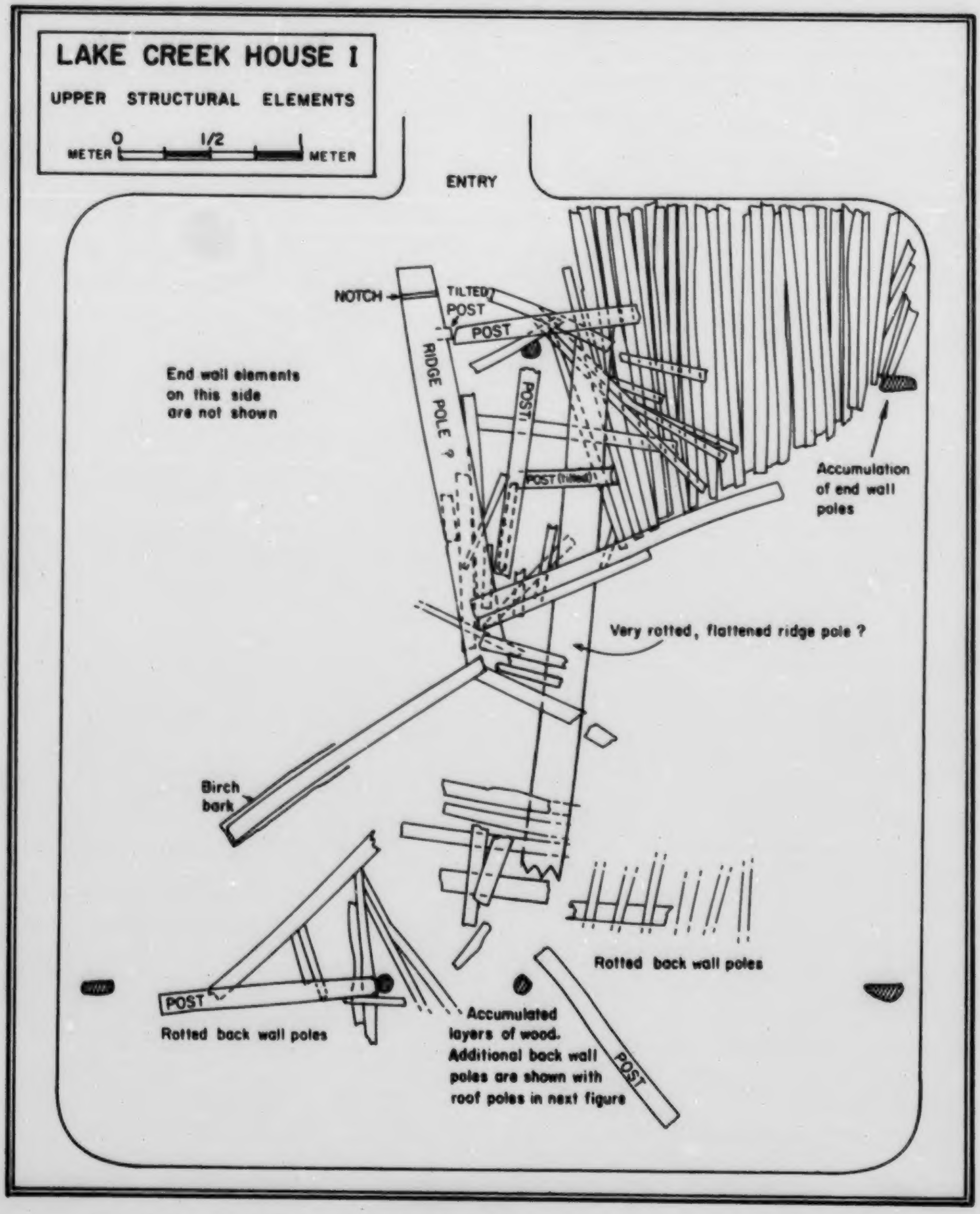

LAKE CREEK HOUSE I
UPPER STRUCTURAL ELEMENTS
0
1/2
METER
METER
ENTRY
NOTCH
TILTED
POST
POST
RIDGE POLE ?
POST?
POST (tilted)
End wall elements on this side are not shown
Accumulation of end wall poles
Very rotted, flattened ridge pole ?
Birch bark
POST
Rotted back wall poles
Accumulated layers of wood. Additional back wall poles are shown with roof poles in next figure
POST
Rotted back wall poles

Fig. 4.16. Excavation of Lake Creek House, No. 1, upper structural elements.

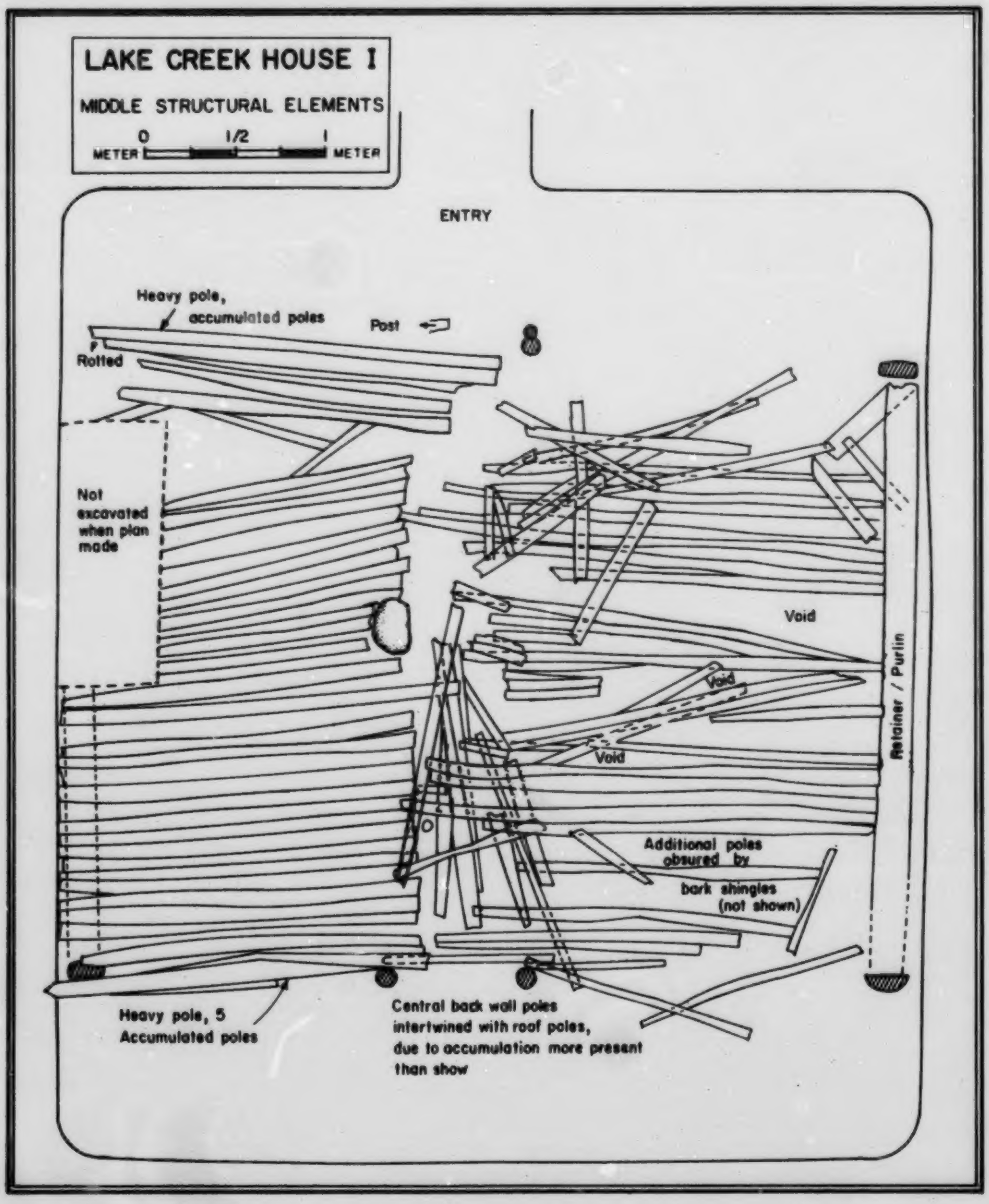

LAKE CREEK HOUSE I
MIDDLE STRUCTURAL ELEMENTS
0
1/2
1
METER
METER
ENTRY
Heavy pole, accumulated poles
Post
Rotted
Not excavated when plan made
Void
Void
Void
Retainer / Purlin
Additional poles obsured by bark shingles (not shown)
Heavy pole, 5 Accumulated poles
Central back wall poles intertwined with roof poles, due to accumulation more present than show

Fig. 4.17. Excavation of Lake Creek House No. 1, middle structural elements.

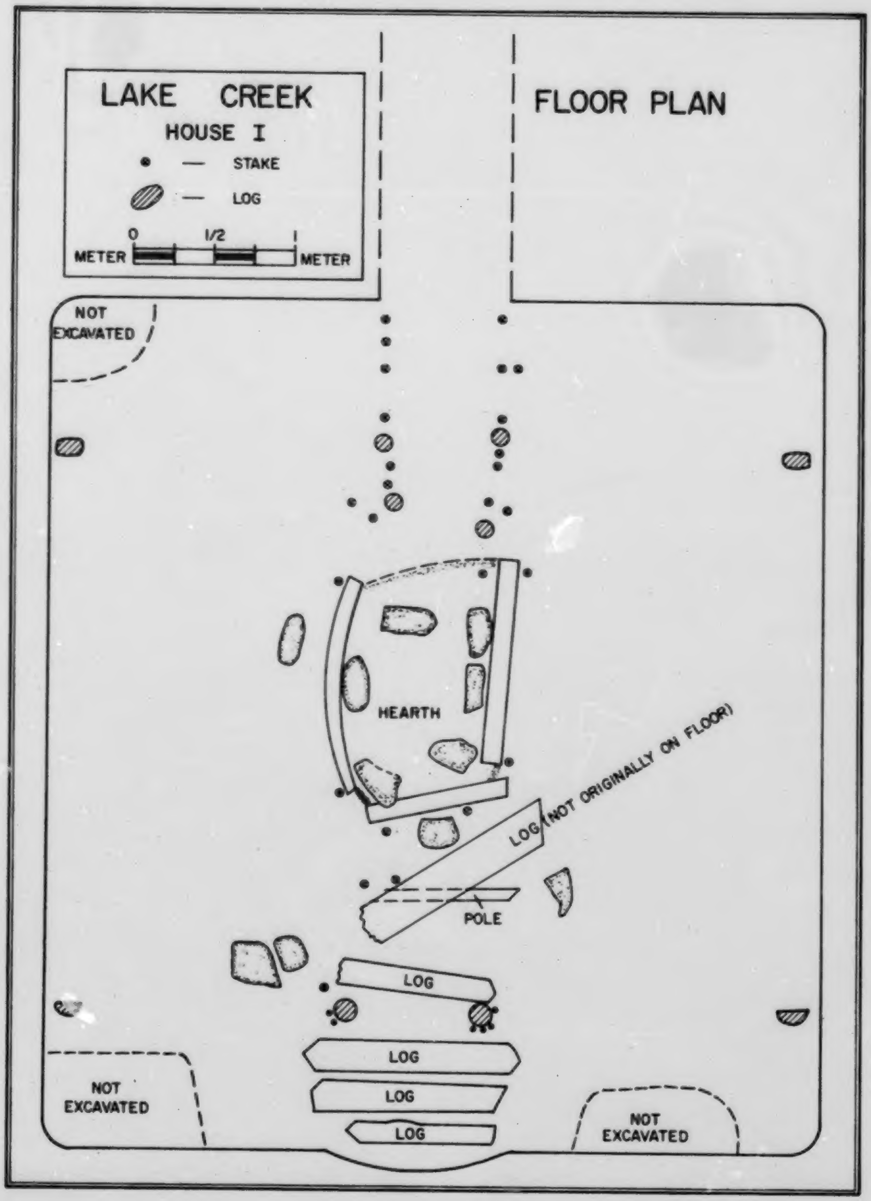

LAKE CREEK
HOUSE I
● — STAKE
▨ — LOG
0
1/2
1
METER
METER
FLOOR PLAN
NOT EXCAVATED
HEARTH
LOG (NOT ORIGINALLY ON FLOOR)
POLE
LOG
LOG
LOG
LOG
NOT EXCAVATED
NOT EXCAVATED

Fig. 4.18. Excavation of Lake Creek House No. 1, basal structural elements.

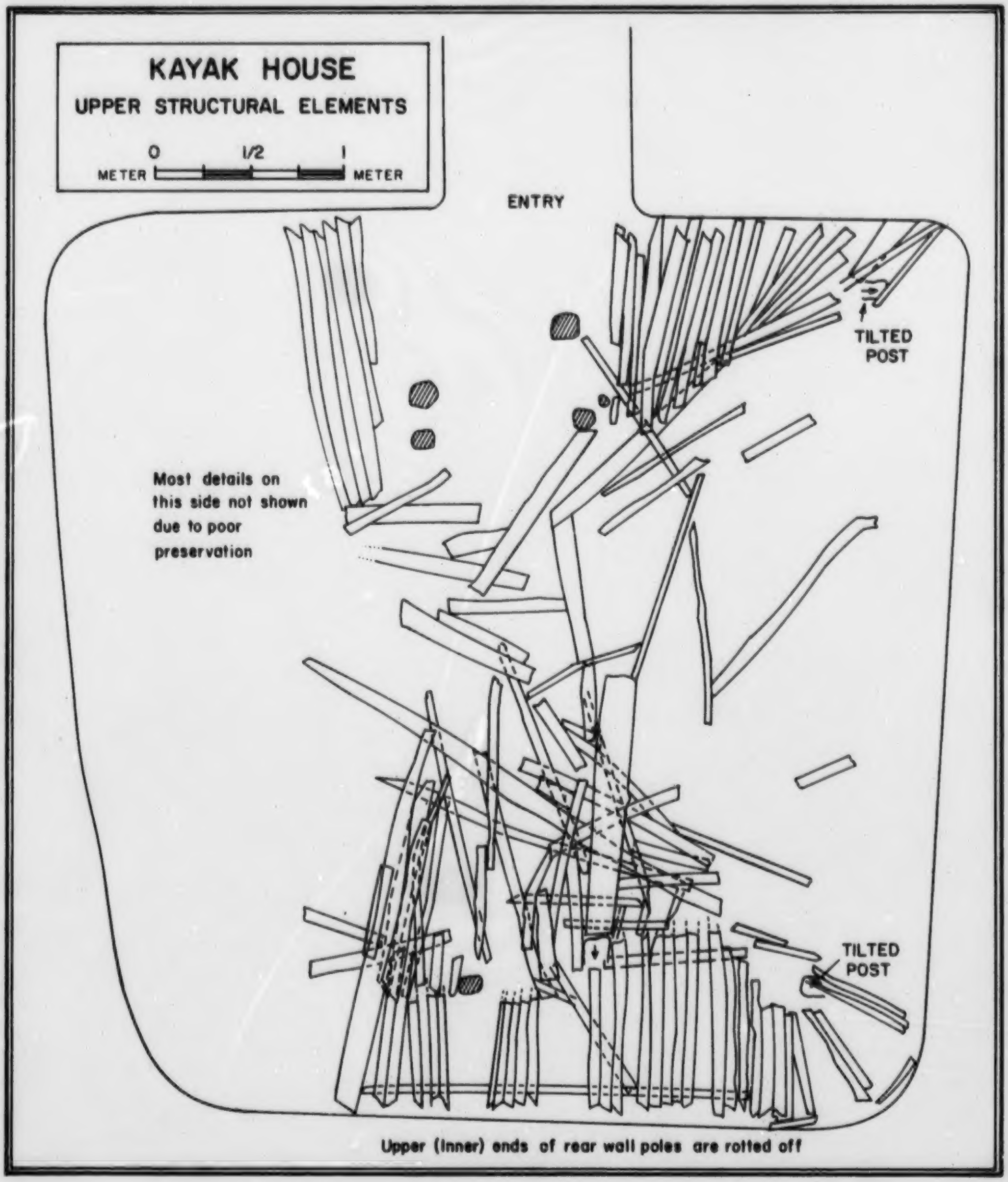

KAYAK HOUSE
UPPER STRUCTURAL ELEMENTS
0
1/2
1
METER
METER
ENTRY
TILTED POST
Most details on this side not shown due to poor preservation
TILTED POST
Upper (Inner) ends of rear wall poles are rotted off

Fig. 4.19. Excavation of the Kayak House, upper structural elements.

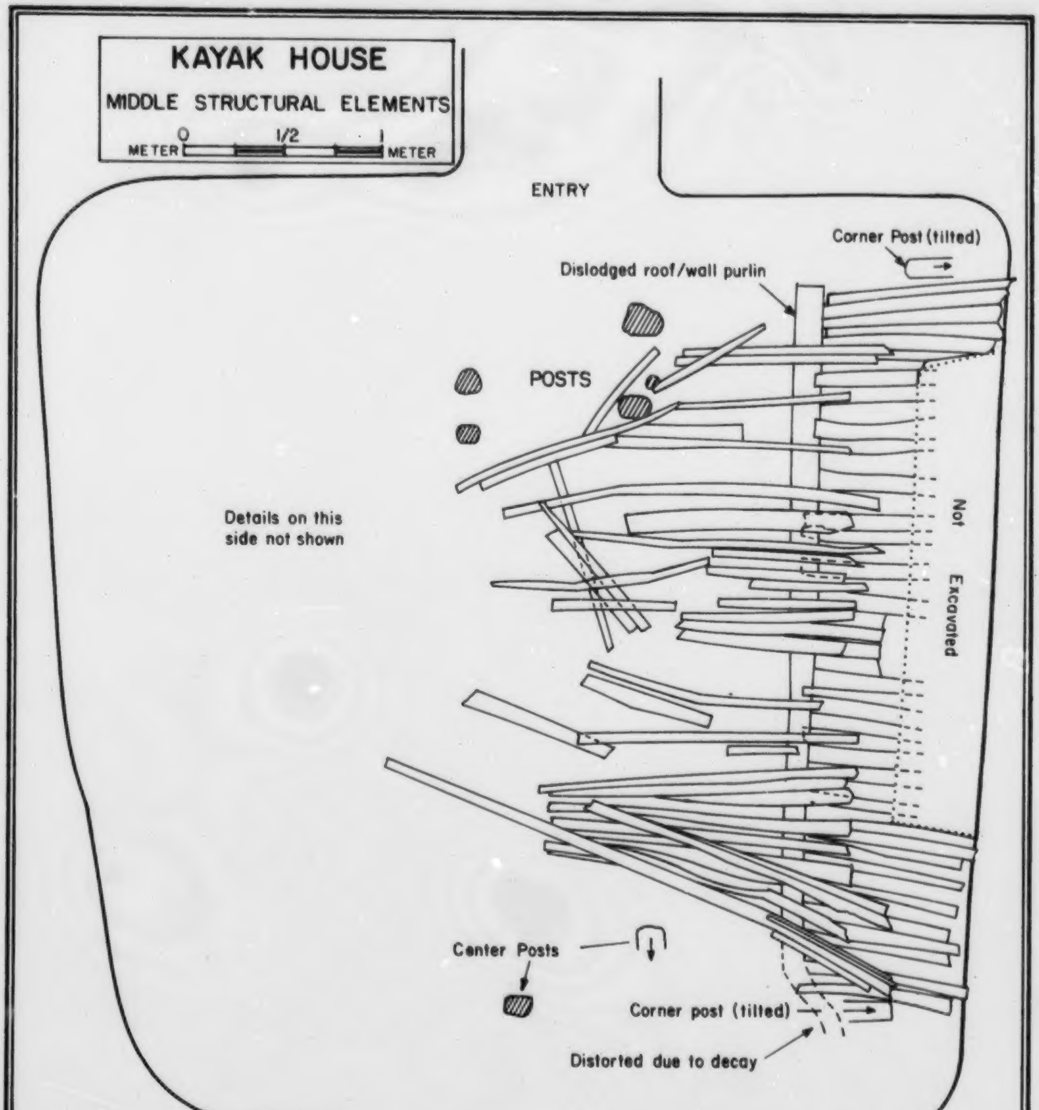

KAYAK HOUSE
MIDDLE STRUCTURAL ELEMENTS
0
1/2
1
METER
METER
ENTRY
Corner Post (tilted)
Dislodged roof/wall purlin
POSTS
Details on this side not shown
Not Excavated
Center Posts
Corner post (tilted)
Distorted due to decay

Fig. 4.20. Excavation of the Kayak House, middle structural elements.

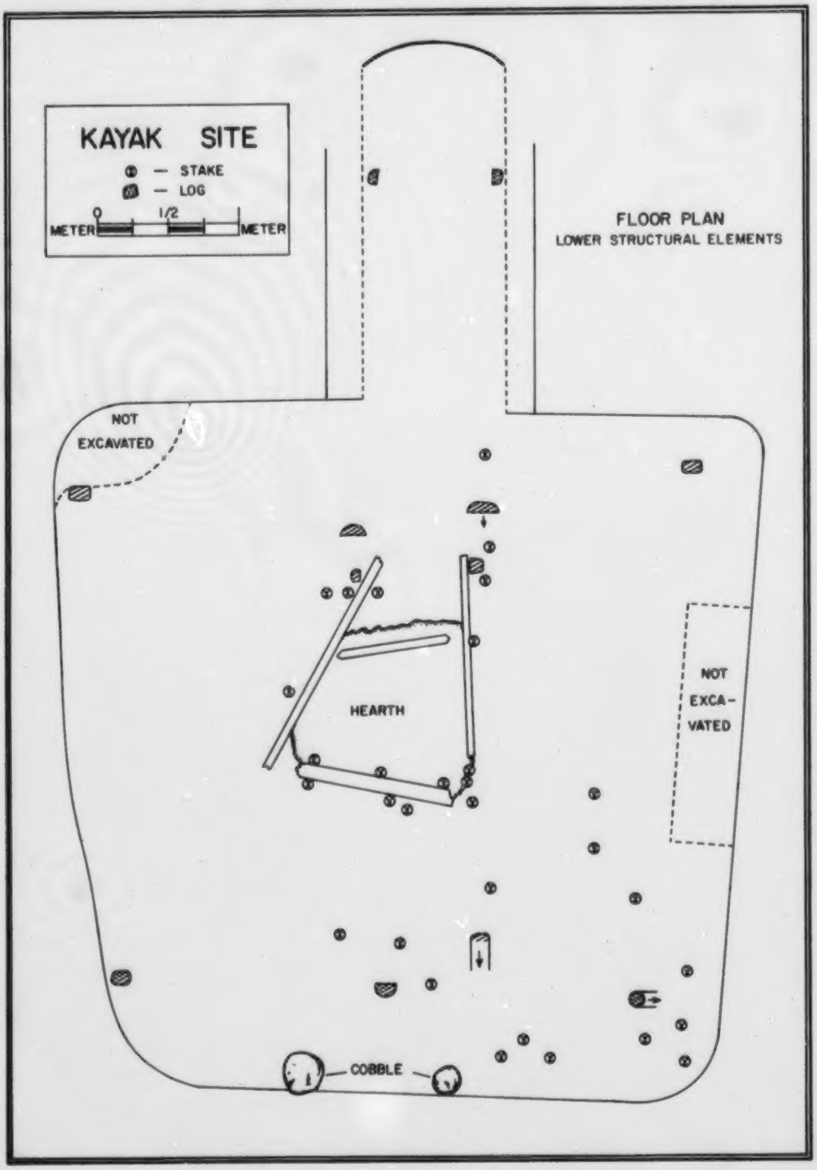

KAYAK SITE
— STAKE
— LOG
0
1/2
METER
METER
FLOOR PLAN
LOWER STRUCTURAL ELEMENTS
NOT EXCAVATED
HEARTH
NOT EXCA-VATED
COBBLE

Fig. 4.21. Excavation of Kayak House, lower structural elements.

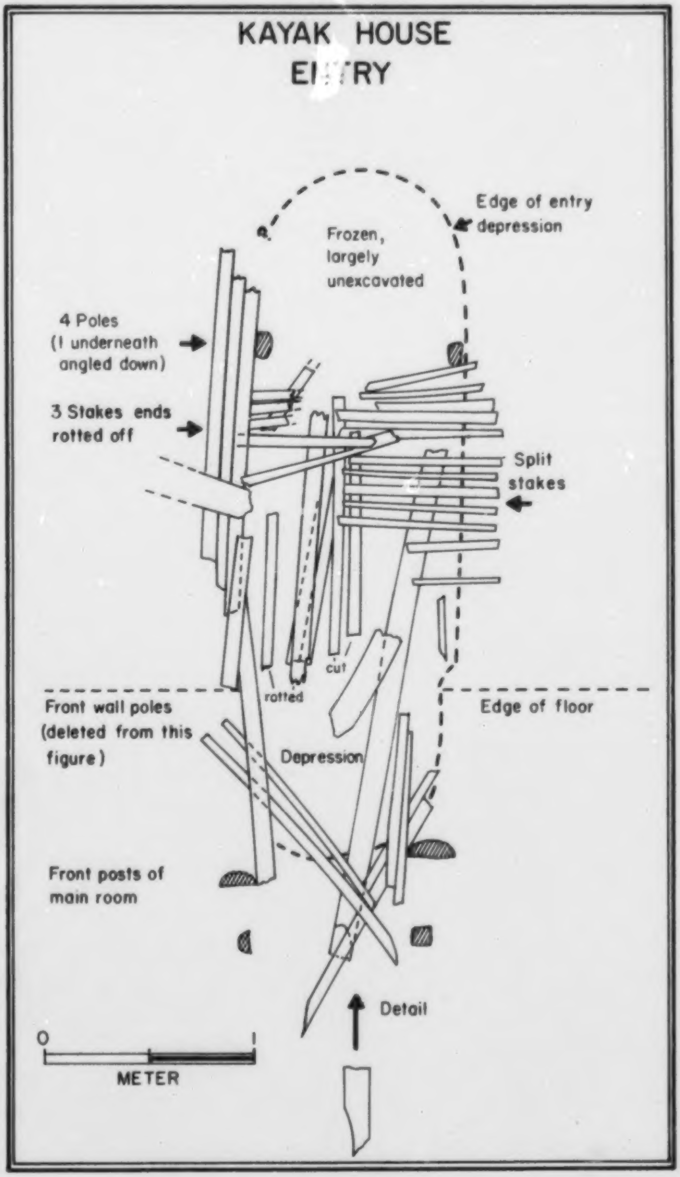

KAYAK HOUSE
ENTRY
Edge of entry depression
Frozen, largely unexcavated
4 Poles (1 underneath angled down)
3 Stakes ends rotted off
Split stakes
cut
rotted
Front wall poles (deleted from this figure)
Edge of floor
Depression
Front posts of main room
Detail
0
1
METER

Fig. 4.22. Excavation of the entrance passage, Kayak House.

amount of displacement when they fall. In some instances, they also may have been recovered for use elsewhere.

East side roof poles which are not shown, were in a disintegrating state, compressed and bent around the top of the wall retainer/purlin log. After the recognized roof and wall elements were removed, there were still a number of poles and pieces of wood on the floor. These do not appear to be in place. They probably are derived from interior fixtures such as racks, and were the earliest pieces to fall preceding general collapse of the roof.

Figures 4.23 - 4.25: Okak House No. 1 Floor and Excavation of the Alcove, Upper and Lower Structural Elements

The upper alcove drawing (Fig. 4.24) does not cover the full extent of the rear room. It was found here, as elsewhere, that the floor extended to greater limits than was at first apparent from the surface pit; and there was no berm at the back of the alcove pit. Some construction principles used in the primary room also were used for the alcove. Thus, a pair of corner posts is found set somewhat inward from the rear corners. A beam apparently ran between them. Figure 4.25 does not duplicate any poles shown in Figure 4.24. Disintegrated remains of vertical wall poles were recovered from two sides. In the alcove, deterioration of structural members was greater than it was in the main room, probably because of its shallower depth. This reconstruction suffers accordingly. No birchbark roof cover was observed for this feature. To roof the alcove, relatively heavy poles were extended from the back wall to an unidentified support at the back of the main room, and probably capped across the ends of the ridge poles. Such construction would give sufficient overhead space at the front of the alcove, although it is conjectured that the roof may have sloped to the rear of the alcove reducing ceiling height to one metre or less. During excavation it appeared as if two layers of timber were present, or that in places poles had accumulated two or three rows deep. Possibly during collapse there was some regrouping of poles, largely from the roof.

Below the rotten wood was a floor layer, several centimeters of sand, and then sandy gravel. The sand/sandy gravel interface may be a lower floor, but only one artifact, a powder can cap, and no faunal remains or organically stained streak were credited to that provenance. The confirmed upper floor also was not artifact rich, but it yielded a fragment of sewn birchbark and some mammal bones. The cleaner condition of the alcove further suggests that functionally this part of the house differed from other areas.

Note the heavy log found slightly within the main room at the front edge of the alcove. This element probably formed and retained the front edge of the raised alcove floor, although an alternative explanation is that it is a fallen beam that had supported one end of the alcove roof. There are a number of other large beams or logs, not all of which are shown in the figures, that appear to be displaced and whose original place has not been determined. These lay at least partially within the main room and include the probable ridge poles and rear posts. Several trees that had fallen into the house pit and had become buried add to the confusion in interpretation. There also is uncertainty as to which pieces are ridge poles, inasmuch as none is where one would be expected with simple collapse.

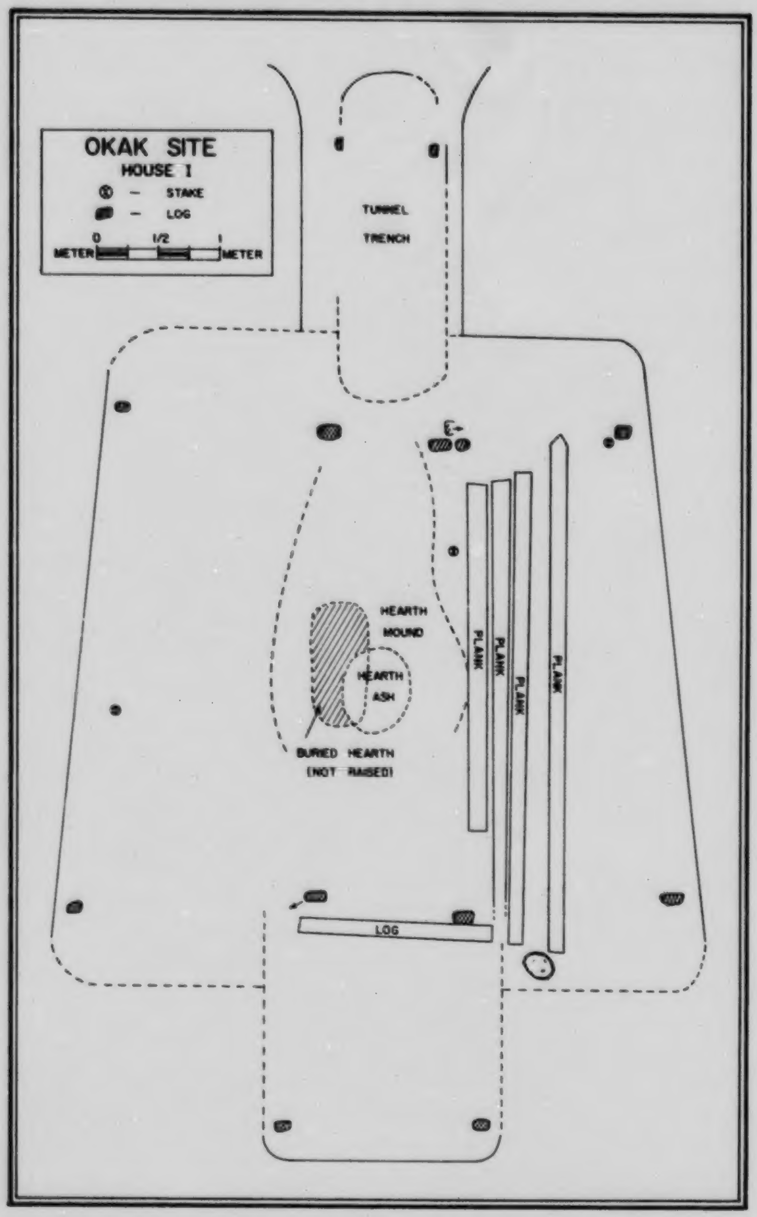

OKAK SITE
HOUSE I
STAKE
LOG
0
1/2
1
METER
METER
TUNNEL
TRENCH
HEARTH
MOUND
HEARTH
ASH
BURIED HEARTH
(NOT RAISED)
PLANK
PLANK
PLANK
PLANK
LOG

Fig. 4.23. Floor plan and lowest structural elements, Okak House No. 1.

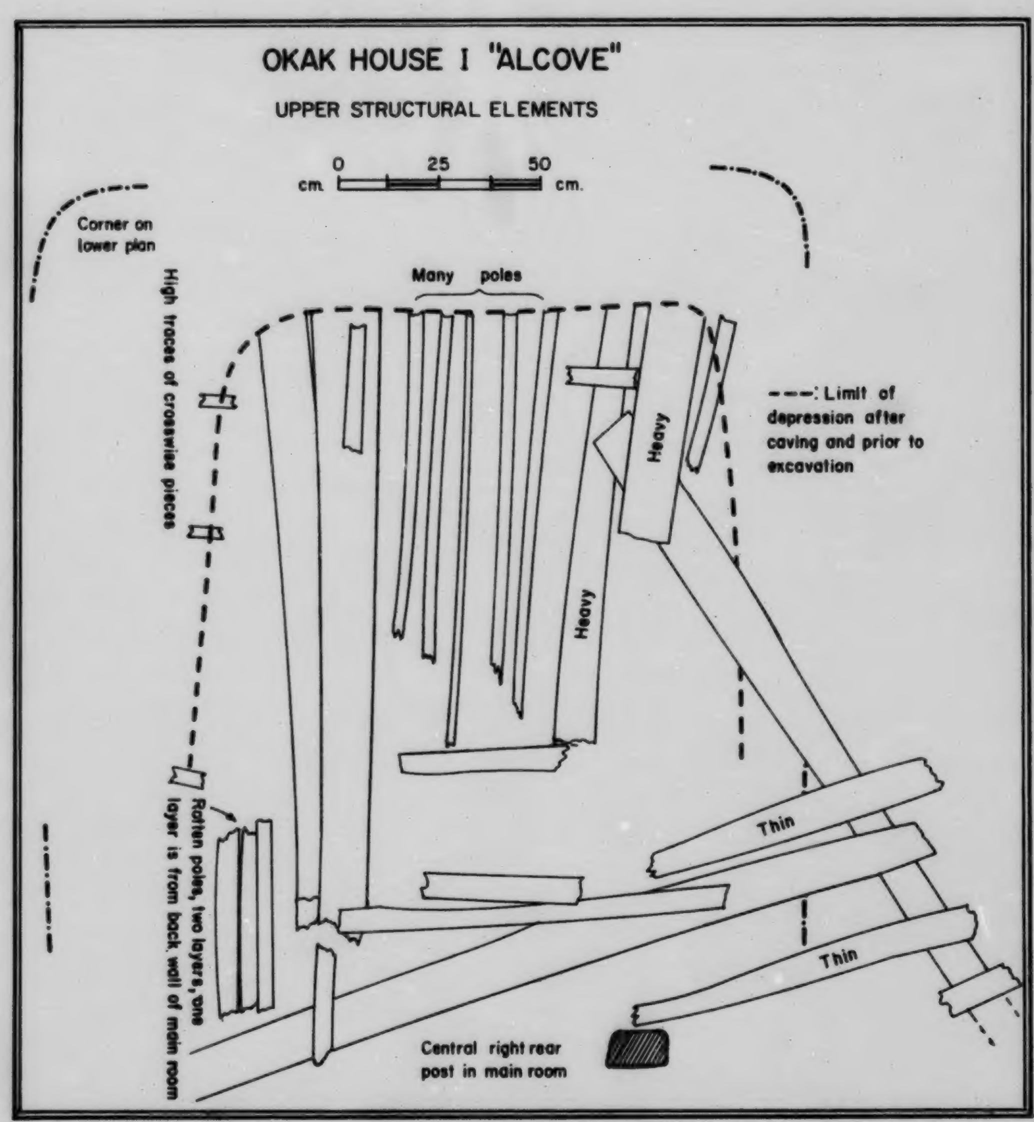

OKAK HOUSE I "ALCOVE"
UPPER STRUCTURAL ELEMENTS
0
25
50
cm.
cm.
Corner on lower plan
Many poles
High traces of crosswise pieces
---: Limit of depression after caving and prior to excavation
Heavy
Heavy
Thin
Thin
Rotten poles, two layers, one layer is from back wall of main room
Central right rear post in main room

Fig. 4.24. Excavation of the Alcove, Okak House No. 1, Upper Structural Elements.

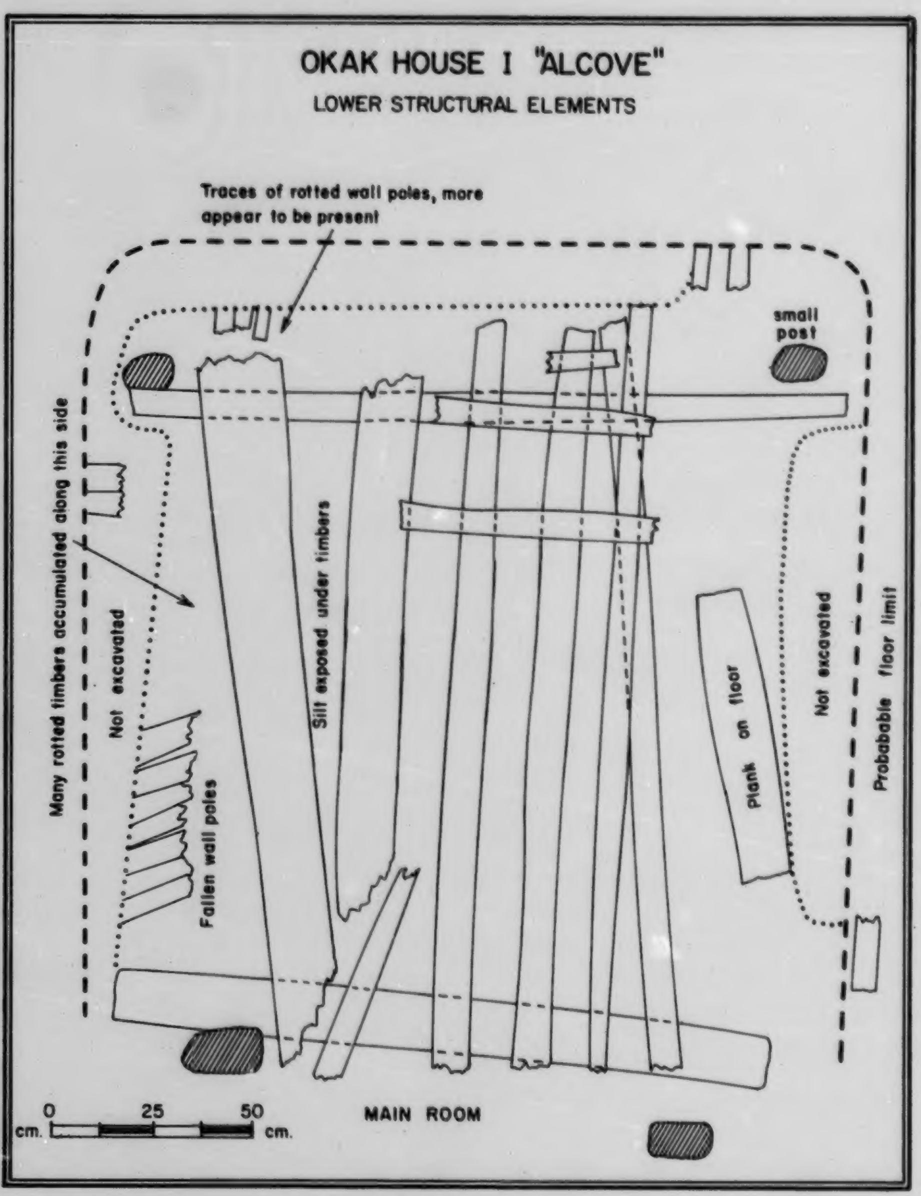

OKAK HOUSE I "ALCOVE"
LOWER STRUCTURAL ELEMENTS
Traces of rotted wall poles, more appear to be present
small post
Many rotted timbers accumulated along this side
Not excavated
Fallen wall poles
Silt exposed under timbers
Plank on floor
Not excavated
Probabable floor limit
0
25
50
cm.
cm.
MAIN ROOM

Fig. 4.25. Excavation of the alcove, Okak House No. 1, lower structural elements.

Figure 4.26: Excavation of the Entrance Passageway of Okak House No. 2, Composite of Upper and Lower Structural Elements

This figure requires little explanation within the level of detail consonant with the others in this chapter. Some short longitudinal poles found at each side of the entry at the inner end are omitted because they appear to be front wall poles.

The entrance to Okak House No. 1, which is not illustrated, is very similar to this one. There,beneath fallen wood and litter, was found a layer that sloped from the sides to the centerline of the tunnel trench. This is interpreted as being material that had slumped into the trench. Below the fill there was a thickly-littered, wide, flat-bottomed floor, covered with spruce bark, twigs, birchbark fragments, mammal bones, artifacts and dog feces.

Figure 4.27 and Table 4.2: Stratigraphy of the Entrance Passage Wall and Floor at Okak House No. 2; and Table 4.3, Okak House 1 Floor Stratigraphy

Figure 4.27 shows stratigraphy of the tunnel floor/fill, stratigraphy of the flanking bank, and that of the side wall where deposits apparently sloughed from the flanks are interbedded with tunnel depression deposits. Notes in Table 4.2 independently record the flanking deposits. The profile in Figure 4.27 reflects the collapse and sloughing of both construct and sidewall layers. The gravel in the trench originally may have covered the roof, although neither here nor elsewhere did we find a very thick sand and gravel deposit in the entry trench. This may indicate that the entry usually was not heavily banked, although the incompletely collapsed tunnel of House 1 at the Dosennaughten Site (McFadyen Clark 1974) does have a thick cover. A clue to the collapse or slumping process in the Okak No. 2 trench can be seen from the attitudes of the entry wall liner stakes. At the inner end these stakes are still vertical, more or less as originally placed. In the middle of the entry they are broken, and above the break they incline inward and down into the trench. At the outer end of the trench the enclosing deposits have slumped so much that the basal end of the stakes point upward and the rest of the once vertical stake is horizontal.

Sequential layers in the main room of Okak House No. 1 are also of interest. They are similar to those found in the three houses discussed in this study, although flood silt deposits may be absent at some and the specific character of substrate and cover deposits varies locally.

Oral Tradition Accounts of Construction and Use of Semisubterranean Houses

In 1961 five different elder consultants explained the complexities of semi-subterranean house construction and use to me. Two of these were Athapaskan women (AK and CB), two were Athapaskan men (JK and EB) and one was an Inupiat woman (ON). Other Athapaskans and Inupiat on the river also provided ancillary information that was primarily anecdotal in nature. By 1968 the women consultants were dead; and by 1972 when the Koyukuk River Culture History Project ended,

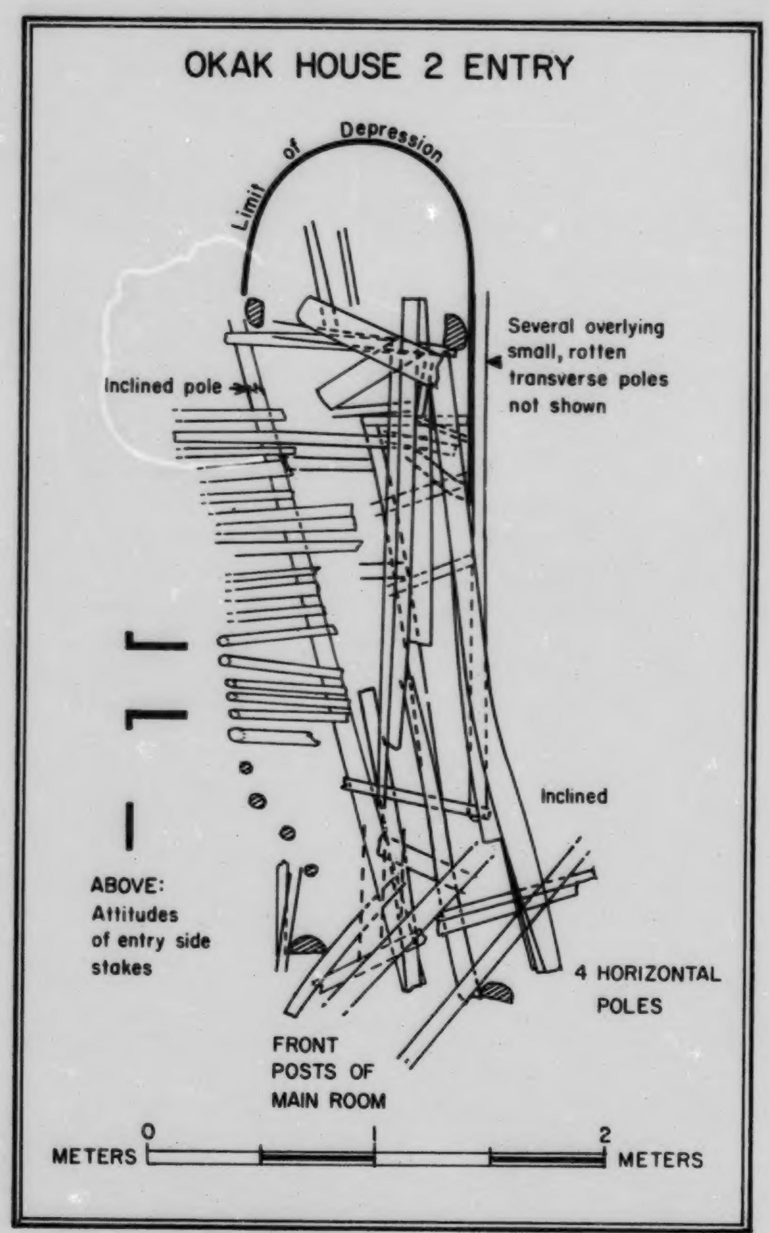

OKAK HOUSE 2 ENTRY
Limit of Depression
Several overlying small, rotten transverse poles not shown
Inclined pole
Inclined
ABOVE: Attitudes of entry side stakes
4 HORIZONTAL POLES
FRONT POSTS OF MAIN ROOM
0
1
2
METERS
METERS

Fig. 4.26. Excavation of the Entrance Passage, Okak House No. 2.

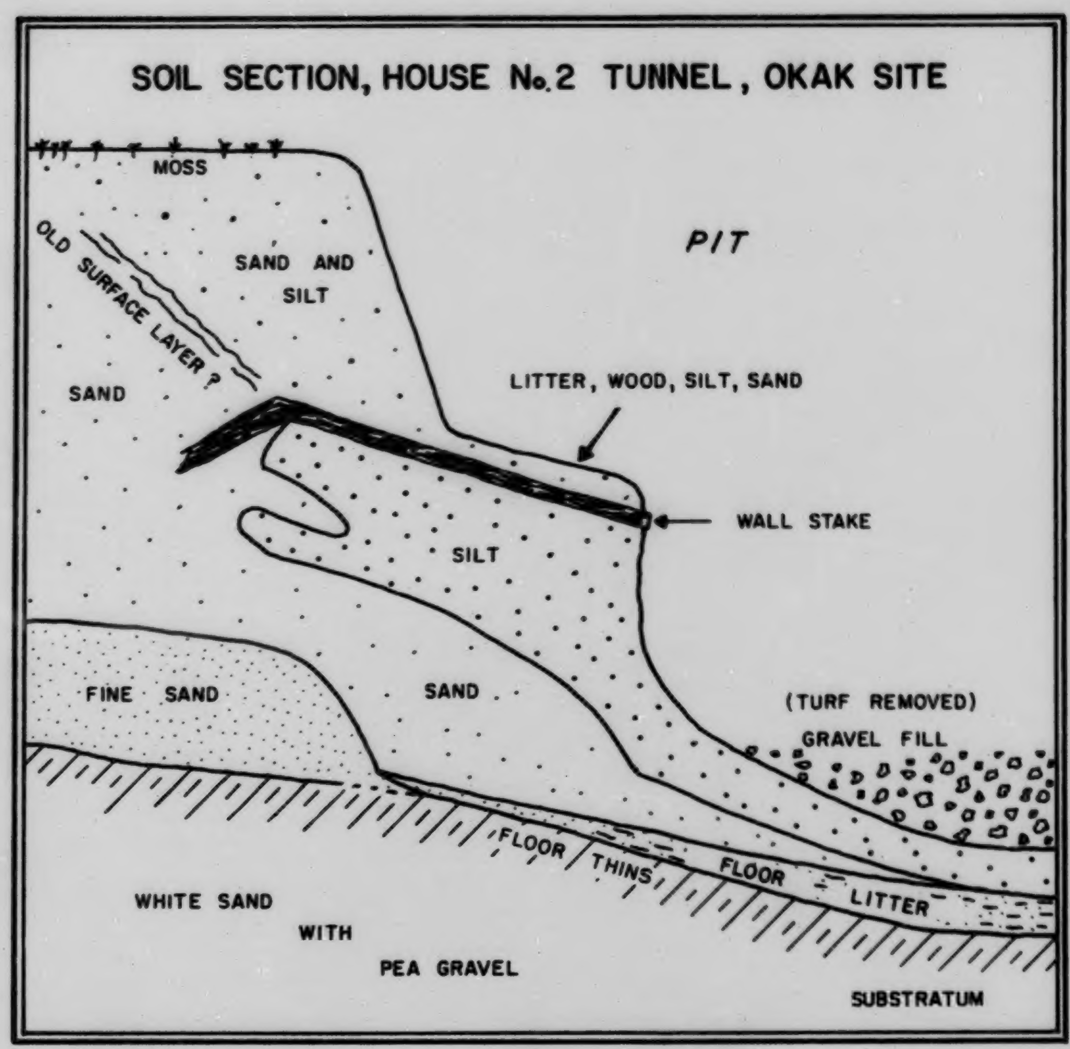

SOIL SECTION, HOUSE No.2 TUNNEL, OKAK SITE
MOSS
OLD SURFACE LAYER ?
SAND AND SILT
PIT
SAND
LITTER, WOOD, SILT, SAND
WALL STAKE
SILT
FINE SAND
SAND
(TURF REMOVED)
GRAVEL FILL
FLOOR THINS
FLOOR LITTER
WHITE SAND WITH PEA GRAVEL
SUBSTRATUM

Fig. 4.27. Stratigraphy of the tunnel wall and floor, Okak House No. 2.

TABLE 4.2. OKAK HOUSE N0.2, STRATIGRAPHY AT ENTRANCE

Series	Description	Notes
Natural surface	Moss	
Building material correlated with construction	Sand & Silt -------- Sand	Material used to bank sides of entry
Original natural surface prior to construction	Old surface organic streak -------------- Sand -------------- Fine sand -------------- White sand	Clayey flood silt from trench & base of wall stakes intercalate below old surface streak

there were still three Koyukuk Athapaskan elders at Huslia, Hughes and Galena (MD, Grandma J. and JH) who had lived in such houses but who were not used as consultants earlier, largely because of problems involving health, senility and communication. During the process of analyzing the ethnographic information I collected on the semisubterranean house experience during the traditional period, I have attempted to refrain from relying exclusively on information provided by the Inupiat woman, ON, although this has been difficult because the Athapaskans kept saying that their houses were "just like the 'Eskimo' houses." This statement appears to be true also for several other types of shelter and caches (McFadyen Clark 1974). In this context, I should point out that among the Koyukuk Athapaskans the semisubterranean houses described herein became obsolete about A.D. 1900 and after that time were used only by a few unmarried traditional persons. They probably had gone out of style earlier along the lower reaches of the river (Huntington 1966). However, among the Inupiat residents on the Koyukuk (ON: field notes 1961), and on the Kobuk as well (Giddings 1952), a version of this house type continued to be used for several more decades. The ethnographic information on the houses presented in the following is a composite of that collected from Koyukuk consultants between 1961 and 1972. No one individual knew all the details.

Information about the location of the base camp sites was obtained in Allakaket and Alatna Additional information on some of these sites and other winter house sites in the Koyukuk drainage was also obtained from elders in other villages along the river. Semisubterranean dwellings were occupied during the late fall, winter and sometimes in early spring. They were then vacated for lighter surface structures, located near-by or at more distant camps. Even during the cold months they were

TABLE 4.3. OKAK HOUSE NO.1 FLOOR STRATIGRAPHY

Description	Origin or Identification
Moss, Vegetation	Contemporary growth in housepit
Silt 0-7 cm	Flood deposit postdating collapse
Sandy gravel	Insulation placed over and around sides of structure
Wood poles and moss	Wall, roof (fallen)
Silt 5 cm	Flood deposit, apparently washed in before collapse of structure
Sand 2 cm more or less	Origin not understood, washed in?
Organic matter mixed with sand	Occupation floor deposit
Sand grading into sandy gravel	Natural substratum

periodically vacated when families went on the hunt in search of game. Old people who were unable to travel were left behind to fend for themselves. Those who were lucky were still alive when the younger members returned from hunting.

Incomplete details were obtained for tunnels. All consultants discussed tunnels, but none remembered exactly how they were constructed. They were said to have been short, low and at floor level. The sides were faced with small poles, a bear skin was hung on the outside and a caribou hide or bear skin on the inside. Within the main room one end of the tunnel was formed by two posts and a header.

Houses were made in different sizes for one, two or three families. The medium size house, apparently the type that was excavated, was about 4.5 by 6 meters in plan. A pit nearly one meter deep was excavated by using the multi-purpose adze and a moose antler and/or a "board" to loosen and remove the soil. Side walls, including corner posts and retainer logs, were described almost exactly as they were found later in the houses excavated. My Inupiat consultant, ON, however, said that the wall and roof poles were willow, a description which in retrospect I think may have referred to a less substantial, temporary form of semisubterranean house like the one she and her husband, N, constructed at the end of the gold rush when they had remained on the Kobuk River until late in the fall before returning to Alatna on the Koyukuk. Further, according to ON, a pair of posts with a header about two feet higher than the walls was put up at the entry to form one end of the tunnel.

At an unspecified distance in from the front and back walls pairs of notched posts were installed to support the paired ridge poles. The ridge poles projected forward beyond their own primary supports to rest on the inner tunnel posts.

Roof poles were described as they were found in the excavations. A satisfactory understanding of the front and back walls was not obtained in 1961, but consultants rejected a drawing showing these walls as vertical. They correctly stated that there was no wall retainer at the front and back. The whole structure was covered with successive layers of moss, sod and dirt.

A raised hearth was built in the center; but when constructed by Inupiat, the hearths were not always raised but were sometimes flush with the floor. Heating stones were placed by the hearth to help retain heat after the fire log was removed for the night. There was an opening in the roof directly above the hearth that served as a smoke hole. A special rectangular cover, made from scraped caribou or moose gut attached to a wooden frame, was used to cover the hole when the fire was out. Small plugs at the front and rear of the house could be removed when required to help the fire draw and to eliminate smoke.

Sleeping benches or pads of spruce and willow boughs were placed against the walls, and the rest of the floor was covered with spruce boughs over which caribou and bear skins were placed.

Before whiteman came, as well as in early contact times, couples without children sometimes kept dogs in the houses, but this practice was only infrequently followed if there were children because the Athapaskans, particularly, believed that if you raised dogs and children together the children would act "just like dogs," would be hard to handle and also would become quarrelsome. Sometimes dogs were kept in the tunnel to warn the occupants if strangers approached, and one's special dog was almost always kept there. These former practices help to explain archaeologic evidence that would be inexplicable in terms of contemporary practice. In 1972, sled and hunting dogs, some puppies excepted, were not brought into or near a house except rarely when in the winter a bitch with puppies might be brought in to keep them from freezing. A contemporary exception to the "no dogs in the house rule" was observed in Huslia in 1971 and 1972. There a few families were beginning to purchase toy poodles and pekinese for house dogs, and one family owned a golden retriever that was very infrequently permitted inside.

Of especial interest is the ethnographic information about utilization of space in semisubterranean houses that I collected in 1961. Later in 1968 no one questioned knew the complete pattern, although some of the remaining elders knew fragments of it and suggested that they thought that the seating arrangement in the semisubterranean houses must have been similar to the pattern followed when they first began to build log cabins at the beginning of the gold rush. Their descriptions of space utilization in the early cabins was almost identical to that described to me earlier for semisubterranean houses.

In Figure 5.4 in Chapter 5, I have illustrated the traditional semisubterranean house space utilization plan in order to compare archaeologic artifact distributions against the ethnographic plan to determine the amount of correlation between the real and ideal patterns. This is also a test of validity of oral tradition. The illustration shows the plan for two resident monogamous families in one house and is based on information provided by consultants in 1961. The two families sat facing one another in the house. The respective wives, babies and female children sat and worked closest to the tunnel entrance; the husbands used the center space on each side opposite the hearth; male children came next, and the back part of the house was used by very old people and unmarried adults.

Position of the houses was also deemed to be important in precontact times, and continued to be so until at least 1972. In 1961 the Inupiat woman, ON, told me that house tunnels usually pointed toward the river, however in 1968 and Athapaskan man, EB, said that they could point in any direction except upriver or north. He cautioned that upriver was the direction in which spirits of the dead went. Therefore it was very important that the houses not point in that direction, because when a person died his spirit might try to get into your house and take you with him if the tunnel entrance pointed upriver toward the land of the dead. The rational for tunnels pointing downriver was that if a person living nearby died, one could run out of his own tunnel and go down river, while the spirit of the deceased went up, thus avoiding danger. It is EB's statement about house positioning that best fits the archaeological data.

Especially important in precontact Koyukuk culture was propitiation of animal spirits to insure a plentiful supply of game and keep the hunters and their families safe from harm. Tenets of propitiation and subsequent disposal of faunal remains, outlined in Chapter I, were a recurring topic throughout the conduct of the Koyukuk River Culture History Project. Elder consultants stressed the fact that people had to be very careful with animal spirits, especially in precontact times. Each time I discussed the paucity of faunal remains found in semisubterranean houses and in general in late prehistoric Athapaskan sites, my consultants pointed to the rule of disposition of faunal remains as being the key to the answer (McFadyen Clark 1970).

Consultants descriptions differ from the archaeological findings mainly in the following two ways: (1) In at least some houses the tunnel is not at floor level but is lower. (2) The entry posts with header appear to have been placed inward instead of forward of the front pair of roof posts, although the construction at the juncture of the tunnel and main room is still imperfectly understood. Archaeological work supplements the oral tradition information by: (1) providing more details of tunnel construction; (2) clarifying construction of the end walls; (3) giving exact specifications; (4) indicating a variation with a back room; (5) pointing out that before the structure was banked it was carefully covered with sewn sheets of birch bark, a fact which some residents were surprised to learn; and (6) indicating bark partitions at the inward projection of the entry. With respect to item 6, a resident of Huslia (L.S.) later said, apparently in hope of explication, that according to "old stories" the houses had been compartmented. The partitions located through excavation do in fact create two compartments at the front of the house. Also, downriver people appeared to have been aware of the bark covering, although this fact was only discussed causally in conversation because by this time it was accepted as an expected trait of house construction.

Ethnographic work supplemented the archaeologic finds by (1) providing more detailed data on the nature of floor and doorway coverings, (2) indicating the identification of heating stones and (3) giving an indication of the function of the extra pair of front posts. It also provided a wealth of information about how people lived in the houses. For example, the information about dogs, spacial arrangements within the house, the reason for its physical orientation with the river and why it should not face north, and especially the body of knowledge and relief that deals with disposition of faunal remains. Respect for the natural environment and especially propitiation of animal spirits is one of the major principles of Koyukuk belief and it permeates the very fabric of their culture. Further, the ethnographic work gave an advance explanation of what was being excavated and permitted placement of this type of structure in a functional context (McFadyen Clark and D. Clark 1974).

CHAPTER 5
HOUSE CONTENTS AND THEIR SPATIAL DISTRIBUTIONS

Discussion in the preceding chapters has focused primarily on the natural environment of the Koyukuk drainage, the culture history and contact-traditional lifeways of the Native residents, three protohistoric winter village sites, and on individual semisubterranean houses in the villages. In each, I first presented an overview of the topic then followed it with more detailed information. This is especially apparent in Chapter 4, which deals specifically with excavation and reconstruction of houses. There I described how the houses looked when I first saw them, discussed their excavation, detailed their reconstruction and compared the archaeologic evidence from the sites with local oral traditions attendant to house construction and use.

In this chapter discussion centers on house contents and their spatial distribution, including native made objects, trade goods, and faunal refuse. Then, in Chapter 6, the Koyukuk houses and their contents will be compared with those excavated in other regions of the Subarctic.

Artifacts

Artifacts excavated from the Koyukuk houses and their associated structures are listed by category and house in Table 5.1 and illustrated in the plates. Because of their specialized nature and for ease of identification, glass beads are identified collectively in Table 5.1, then classified separately by type in Table 5.2. Detailed descriptions of the objects excavated are not given, except in those instances where it is believed that refinement of existing knowledge may be achieved, because many of those recovered are readily identifiable ones from Western material culture. Similar pieces from other Alaskan sites have been described by Oswalt, VanStone and others (Oswalt 1980, Oswalt and VanStone 1967; Vanstone 1968, 1970; Vanstone and Townsend 1970).

Contents have been classified primarily into two groups: western imports, such as metal and ceramic objects; and indigenous or locally made items of stone, bone, wood and bark. Within each material subgroup the descriptions have been ordered by functional complex, here into four only because of the small sample. These groups are not explicitly indicated in the text but are as follows: (a) firearms and hunting; (b) tools and implements, including craft byproducts and some unidentified pieces; (c) culinary accessories and containers; and (d) personal adornment, clothing and smoking. Under some circumstances classification by material would not have been meaningful, either culturally or historically. In the present case, however, materials tend to coincide with sets which are useful indicators of contact and acculturation. For three decades Oswalt and VanStone (1967) and Van Stone (1968, 1970) have used a system similar to the one employed here. Their categories, which will be used for interpreting the present collection, are: (a) indigenous continuities, consisting of traditional precontact-type items of local material; (b) indigenous derived forms, consisting of copies or permutations of traditional-type implements made from imported western material or of items which

TABLE 5.1. ARTIFACTS FROM THREE KOYUKUK HOUSES

Description	Lake Creek SclC-1	Kayak site SdIb-1	Okak site SdIb-2	Plate No.
Trigger guard, copper alloy, broken and modified	-	1	-	2G
Musket sidelock plate with Russian letters	-	-	1	2M
Musket ball	-	2	1	2F
Shot, 3-4 mm diameter	2	12	-	1
Small lead fragments & strip from powder can cap	-	9	-	2C
Metal container, sides modified with cuts (top is listed below)	1	-	1	3L
Primer or percussion cap can, top, embossed ELEY BRO and LONDON	1	-	-	3M
Powder canister, without top, contained spruce resin and charcoal	2	-	1	5E-F
Powder canister cap, cap with neck	-	1	1	2K-L
Powder canister top	3	3	-	4K
Powder canister base	2	-	-	4L
Metal sheet from sides of whole can (1) & fragments	4	-	2	5D
Cartridge case, .44 rimfire, "H" headstamp	1	3	1	2I
Brass ring from head of .44 cartridge, 11 mm diameter	-	1	-	2B
Cartridge case, .44 rimfire, slipped over end of rod (blunt arrow point?)	-	1 (above)		2I
Crooked knife blade (from cache pit)	-	1	-	3C
Pocket knife	1	-	-	3K
Three-cornered file, tip only	1	-	-	2D
Adze or scraper blade, made from a thin iron plate	1	-	-	4J
Scraper or ulu blade, serrated thin metal sheet	-	1	-	4M
Probable scraper, bent metal sheet	-	-	2	3H
Wood screw, iron	-	1	-	2E
Iron tube (in 2 pieces)	-	1	-	4A
Iron spoon, basin	1	-	-	3J
Pan, small, folded from sheet metal				

salvaged from powder canister	1	-	1	5A-B
Brass button, convex face with U.S. eagle; "EXTRA QUALITY" on reverse	-	-	1	2J
Lavaliere	-	1	-	2N
Iron and other metal fragments	4	1	-	-
Glass beads	131	1169	418	1
Sherd, ironstone?, thick, white, glazed, edge utilized (worn)	1	-	-	3I
Button, small, plain 4-hole milk glass	2	-	1	2A
Pipe stem, kaolin sherd, stamped McDOUGALL and GLASGOW	-	1	-	2H
Fabric, from shawl or garment	1	-	-	4.3
Suspender attaching strap?, leather, tongue-shaped with eyelet, riveted loop	1	-	-	3G
Hide scraping stone, chipped sandstone and greywacke, red paint stain present (4, Okak House 1; 2, Okak House 2)	3	6	4+2	6
Abrasive stone, hone, natural 13 cm bar	-	-	1	5C
Battered gray chert (strike-a-light?)	-	1	-	3A
Red paint mixing basin, natural basin	1	-	-	7
Red paint stone (baked rock), finds	5	-	-	3B
Snowshoe filling needle, flat, bipointed with central hole	-	1	-	-
Bone pin, roughly bipointed, 13 cm	-	-	1	3E
Bone pin, rough, thinned ends, 18 cm	-	-	1	4B
Bone, worked			1	3D
Antler, worked fragment (harpoon barb?)	-	-	1	-
Cut and modified antler (not counting 3 cut antlers at Lake Creek)	-	1	-	4G
Marked (incised lines) bone splinter	-	-	1	4C
Wooden skewer, probably for cooking (most discarded in the field)	8	12	-	9A
Wooden wedge	-	1	-	-
Small thin wooden plank or implement	1	-	-	9A
Unidentified notched bar	1	-	-	4.2
Unidentified worked wooden pieces	4	9	-	3F, 4
Sewn birchbark, roof and entryway	Sampled	*	**	3.5--
Basket, birchbark tray	2	2	1	8, 9B

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* Sketched and discarded in the lab. ** Sketched and discarded on site.

are readapted western imports; and (c) imported western manufacture items. An additional category not used in this study consists of copies of imports produced using local material. In many cases it is possible to recognize two categories for an item: an original import used for the purpose for which it was produced, and a remanufactured, indigenous derived, recycled form. The categories to which the items belong are not shown in Table 5.1, but they should be apparent from the object descriptions.

Metal Artifacts

Trigger Guard (Pl. 2 G). This broken brass trigger guard is only 52 mm long inside and is probably from a single-trigger arm. The style, as well as the floral motif shown in the illustration, is similar to that of muzzle loaders. Three mending holes in the guard suggest that the gun from which it has come had been repaired. At one end there are two conical holes, one of which still retains sinew fibers. The larger gouged-appearing, slightly biconical hole at the other end contains a one-inch-long wiry length of lead.

Lockplate (Pl. 2 M). The side lockplate from a muzzle-loading firearm has several threaded and unthreaded holes. Judging from the mushrooming at one end, the piece was used secondarily as a chisel or wedge. Wear marks from reuse have obscured part of the Russian stamping. Presently it reads НУЛА , although on the basis of the Russian alphabet one would not expect to find the distorted letter on the left portrayed as it is here. If it were a "T", and no letters are missing, one would have "Tula", a well-known nineteenth century Russian arms center. Zagoskin remarks that he took Tula arms with him to Alaska in 1842, but that he found them inferior and more difficult to deploy than others (Zagoskin 1967).

Balls (N=3, Pl. 2F). The three lead musket balls are not perfect spheres, but are 11.8-12.1, 12.1-14, and 13.3-13.8 mm in diameter, respectively. Two show muted girdling ridges, and, in places, grooves that evidently came from the casting moulds.

Shot (N=12, Pl. 1). Twelve pieces of shot range from 3.5 mm to 4.5 mm in diameter.

Other Lead (N-9, Pl. 2C). Small fragments and drops of lead may be from material being processed to make lead balls or being salvaged for this purpose. One fragment appears to be from the neck of a powder canister.

Cap Cans (N=2 bases & 1 lid, Pl. 3 M-L). The bodies of two cap or primer containers and one lid were recovered. It is not certain if these were for caps used with cap-lock mechanisms or for primers used for reloading center-fire cartridges. The evidence of association strongly favors the first identification. On the lid the words "ELEY BRO" and "LONDON" are stamped in two lines of raised letters, each of a different size. It is 40 mm in diameter and 5.8 mm deep and fits snugly over the bases of the containers. The latter are 39 mm in diameter and 14.2 mm deep. Both are split or cut around the sides into 10 sections. A soft white metal plating (nickel or tin?) remains, although it is obscured in most places by an encrustation of rust.

Powder Canisters and Parts. There are three powder cans with tops removed and a number of pieces from canisters as listed below. Implements produced from metal sheet salvaged from powder cans are described later.

3 cans with tops removed (Pl. 5 E-F)
2 screw caps, 1 with a neck (Pl. 2 K-L)
6 can tops, some fragmentary (Pl. 4 K)
2 canister bases (Pl. 4 L)
1 can side, unfolded to form a metal sheet (incomplete) (Pl. 5 D)
3 cut metal sheets, apparently from sides of canisters.

On the base of each can are the bold raised letters "PAT. 1859." Green paint is relatively fresh appearing on one can, a fragment of cut metal has a very dark olive-colored surface, and on another canister there are traces of deep red or maroon which locally is oxidized to a bright cinnabar red. However, most specimens are encrusted with rust. The canisters are flattened ovals in cross section and measure 34 mm thick, 96.5 mm wide and 113 mm high. There is a central hole in the top, 14-15 mm in diameter, greater in one case, that receives the lead neck with its cap. Both caps are knurled and are 19 mm in diameter. One is plain while the other has two raised concentric circles on the upper surface. Some of the powder cans had been used secondarily as containers; others were being dismantled to salvage the metal sheet.

44 Calibre Cartridge Case (N=5, Pl. 2I). The 44 calibre rimfire cartridges are commonly called 44 Henry cartridges, although they were used in a number of arms. Those recovered are 13.1 mm in diameter across the rim and 11.4 mm (0.43 inch, hence 44 cal.) across the body. Total length is 23.7 mm, exclusive of secondary swelling at the cap. All specimens have a raised "H" headstamp, usually placed within a very slightly recessed circle. There is a distinct delicate groove around the distal end of one case. Each bears double opposed firing-pin strikes near the rim, with repeated pairs of strikes in one case. The double firing-pin is reported for the 44 Henry rifle.

One cartridge case contains the end of a cut wooden plug. Another is crimped in a manner to suggest that it had been fixed onto a wooden shaft. Comparison of these with more complete specimens in other collections (VanStone 1970:69) and with the contemporary practice of children using cartridge cases as tips for toy arrows, leads me to think that these may have been used either as toys or as blunt arrows with cartridge-case ends.

Crooked Knife Pl. 3C). This knife has been sharpened on the left edge (curve up, tang towards observer). It is 109 mm long in planar projection, and the tang is *c* 46 mm. The tang is tapered and the knife is thickest (3 mm) at the base of the blade. It narrows and thins towards the end, with a pronounced stepdown to 17 mm width along the blunt back, shortly before the blade begins its pronounced curve. This specimen may be a commercially-produced item or it may have been made locally from a knife blade.

Pocket Knife (Pl. 3K). A twin-bladed bone, iron and brass pocket knife was found at Lake Creek. The brass component is limited to a small plate inset into the side. No identification marks were observed, but the 91.5-mm-long piece is too corroded to be opened. Three fish scales are stuck to it and evidently are ones left from the last time the knife was used.

File (Pl. 2D). The extreme end, 17.5 mm, of a triangular file was recovered. A senior resident of Allakaket showed me a metal chisel made from a piece of a small triangular file. Its 5-mm-wide bit projected 6.5 cm from a slightly tapered 7.5-cm-long wooden handle. The piece recovered from excavation may be a fragment discarded from making such a chisel.

Scraper or Adze Blade (Pl. 4J). Heavy encrustation and corrosion obscure some details of this thin, nearly flat 107-mm-long blade. The broader end is acutely bevelled, producing a piece apparently suitable for use as a scraper or as an adze blade. Irregularities along the sides suggest that the blade may have been cut from a larger piece of iron. There are two holes, one of which is tapered, but these features may have resulted from the blade having been fashioned from recycled material and were not necessarily intended for hafting the implement.

Thin Serrated Blade (Pl. 4M). An incomplete flat sheetmetal blade has a number of tiny serrations along one intact margin. The serrations are spaced irregularly but average 4-5 mm apart. Blades with serrated edges may have been used to process hides, but due to its thinness the present specimen would not have been suitable for heavy work. An alternate interpretation is that this specimen is a woman's knife (*ulu* or *klabas*).

Unidentified Sheetmetal Objects of Indigenous Manufacture (N=2, Pl. 3H). The rectangular object in Plate 3H measures 38 by 76 mm. Its back was formed by folding over part of the metal sheet; and there is another narrow fold along one side that probably was present on the stock material salvaged from a powder can. The edge on the lower margin is smooth. A second rectangular piece of folded metal measures 46 mm by 67 mm. Again, the back is formed by a fold in the metal, and along one side there also is a narrow fold apparently from the seam of a powder can. These two roughly constructed objects may have been used as scrapers.

Wood Screw (Pl. 2E). One metal wood screw with flat, slotted, bevelled head is 26 mm long (possibly broken) and 11.5 mm in diameter across the head.

Rolled Rod (Pl. 4A). This 206-mm-long rolled metal tube or rod was found in two fragments. It is hollow and 5 to 5.5-mm in diameter and was formed by a strip of metal folded or rolled over upon itself with approximately one-third overlap. The seam along the side is open. This roughly-made item probably was produced locally.

Spoon (Pl. 3J). The corroded spoon basin shows lipping on both surfaces at the proximal end, which is a characteristic of the attachment of a separate piece for the handle (now broken). Traces of bright soft metal, overlaid by corrosion and encrustations, are visible in the basin. Rust deposits may indicate that the core is iron. For further details see analysis in Chapter 6.

Pans (N=2, Pl. 5A-B). Two small pans that resemble birchbark basket trays are made from sheets of metal. The larger, subrectangular one is 153 mm long and averages 124 mm wide at the top, but is somewhat narrower at the base. It is about 35 mm deep. The sheet from which it was made measured 145 mm by 200 mm. This pan is somewhat irregular in its construction due largely to imperfect squaring of the seamless folds and bottom edges. Fabrication can be visualized by folding a sheet of paper to form a tray without making cuts at the corners (Fig. 5.1). Panels A and B are folded together and the flap thus left is folded against either wall of the container. This cannot be accomplished by simply folding along creases. The corner fold is a forced bend, and this may account for the rounding of corners. Because the sides slope, the flap produced by folding corner segments would protrude above the rim, but in these examples the "tab" was folded into the interior.

The second pan is made from the sides of a powder can; but the first one described probably was made from metal from another source. A sheet of metal measuring 112 by 225 mm, excluding the side seam, can be obtained from a powder can. This compares closely with the 114 by 226 mm sheet from which the second pan was made. Length and width are, at the maximum, 162 mm and 89 mm, respectively; and it is 26 mm deep at the center. Its sides slope and the bottom is rounded.

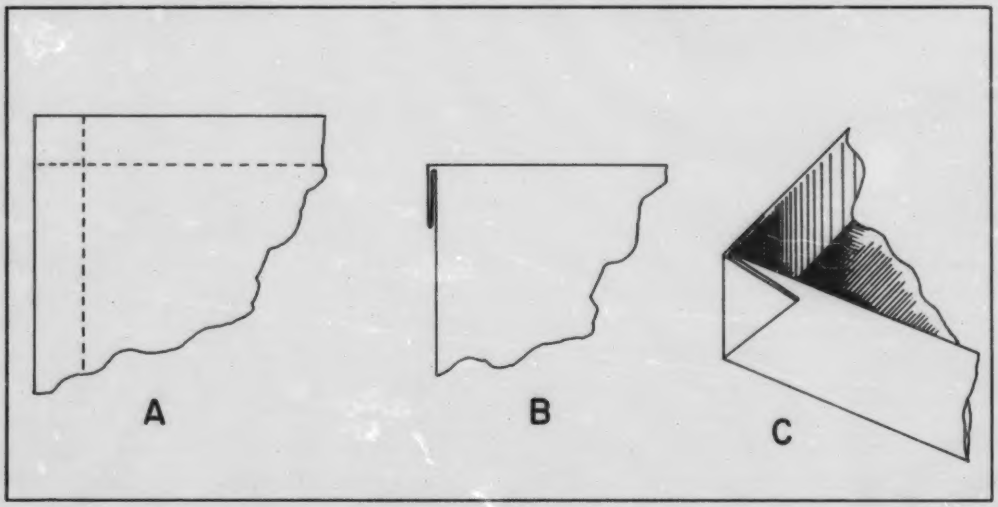


Fig. 5.1. Schematic representation of folding a pan from a single sheet of metal.

Powder Can Containers. One of the three powder canisters previously described contained charcoal and spruce resin (pitch). Local tradition suggests that pitch was used to seal seams in birchbark containers or canoes, while the charcoal may have been used to blacken the seams to preclude dangerous spirits from passing through them. According to local Athapaskan tradition, black stove soot or charcoal were used on objects and/or placed around dwellings, caches, etc., to keep their contents safe from evil spirits. This may be the rationale for keeping resin and charcoal together in the same container. It is inferred from the obvious use of one can as a container that the others were used for the same purpose.

Button (Pl. 2J). A convex, brass, military-style button with eagle emblem in relief has a separate back disc with attached wire loop eye. The reverse side is embossed in negative relief: "RA" [e.g., EXTRA but with first letters missing] and "QUALITY". The top of the letters faces outward for "extra" and inward for "quality." The eagle portrayed is the national emblem of the United States, with shield on its breast, three arrows held by the right talons and an olive branch by the left. The button is 19.5 mm in diameter and 6.5 mm thick, exclusive of the eye.

Lavaliere (Pl. 2N). The copper-alloy lavaliere held a 25.5 mm stone, which was not recovered, surrounded by four wire rosettes, three of which secure the mount to the outer ring. At one end there is a wire hook and at the other end an apparent insertion for a hinge pin. One of the rosettes is bound to the outer ring with sinew, although for no apparent reason inasmuch as it is firmly in place.

Miscellaneous Pieces of Metal (N=6). Three scraps of corroded iron, a tiny cut rectangle of metal with hard (paint?) finish and an unformed flat object or discarded piece of light grey metal defy further classification.

Ceramics

Ceramic artifacts consist primarily of beads, but also included in this category are a pipe stem, a sherd and a few buttons.

Sherd (scraper?) (Pl. 3I). This plain, thick (up to 9 mm), glazed, white earthenware or ironstone sherd may be from a soup bowl or from flatware. Several edges and portions of one break are secondarily smoothed. It has not been stream-rolled, yet visible wear is not localized in a manner suggestive of a scraper. Most smoothing is located along the interior and exterior edges and across the breadth of the break at the left margin as the piece is illustrated. No wear striations were observed under magnification, a few scratches on the glazed surface excepted. Nevertheless, I think that the piece was used to scrape hard material. This interpretation is compatible with the fact that only the single sherd was found. The complete object from which it came may never have been a part of this household's inventory.

Buttons (N=3, Pl. 2A). Three plain, four-hole, recessed-center "milk glass" buttons are illustrated. They are 10.0, 10.3 and 10.7 mm in diameter.

Pipe Stem (Pl. 2H). One side of the substantial fragment of a kaolin pipe stem is impressed "GLASGOW." The other side reads "McDOUGALL," progressing in the opposite direction. Near the first there is a small informal area about 3 mm wide that has a lozenge-shaped checked impression.

Beads (N=1714, Pl. 1). Glass beads are listed and described in Table 5.2. Two basic forms are present: spherical and cylindrical or tubular. Only a few are spherical, but most of the numerous cylindrical beads, which are broken segments of tubes or canes, are sufficiently rounded to approach being spheres. The manner in which the few non-cane types are made is unclear. In most cases they appear to be moulded, although a few are wound. Except for the two major varieties of Cornaline d'Allepo beads -- clear green-lined and white-lined -- there are no layered, striped or inlaid beads. Seventeen descriptive categories have been used in Table 5.2., but within the better represented groups there is a good deal of intragroup variability in size, roundness, aperture diameter and freshness of the surface and, especially among the blues, color. Many beads retain a glazed or porcelaineous surface while others have lost this luster. Opacity and translucency, as stated in Table 5.2, are only estimates inasmuch as no instrumental determination was made for this attribute. The first measurement given is for length parallel to the perforation; and the second, usually the greater dimension, is the width. None of the beads in this collection except those noted in Note b of Table 5.2 appear to be infected with glass bead disease, a degenerative condition that causes old beads to crumble, that may be caused by the composition of certain batches of glass used in their manufacture. It is the bane of museum curators, especially when ones "infected" with it are found on priceless traditional objects.

Fabric and Leather

Fabric (Cloth). One piece of knitted woollen fabric was recovered. When found it consisted of a folded and crumpled mass of material covered with small twigs, spruce needles, dried leaves and dirt. It was unfolded, cleaned, conserved, identified and tested for dyes by E. Burnham and E. Moffatt of the Canadian Conservation Institute, Ottawa, who reported the following technical details:

The largest of two salvaged fragments is 56 cm wide and 20 cm long, with a 1.5-cm-wide double knitted border along the top edge. Other margins are not intact, except possibly for one slanted edge. It is dark brown with traces of bluish color (blue fibre) observable on the smaller fragment prior to cleaning. The wool is Z twist, loosely spun, single yarn woven using a knitted plain stocking stitch (Fig. 5.2). At first it looked as if every second stitch had been dropped or had run, but closer identification showed that there might have been a second wool thread used in another color, as an alternating stitch, that had corroded leaving some very small traces of blue wool on the fragment. The piece could have been knitted by hand but it is more likely that it was machine knitted in Europe or the United States. Considering the types of goods traded on the Yukon River in Alaska about 1870-1880, the fragments probably come from a shawl.

TABLE 5.2. GLASS BEADS

	Description	Frequency Kayak	Okak	Lake Cr	Total
1	Black, opaque, cylindrical to spheroidal, 5.6-8.0 mm dia., like groups 6, 10, 13	417a	53b	7	477
2	Purple, translucent/clear, spherical, 7.3x7.8 to 7.4x9.0 mm, like groups 3 & 4, flattened around perforation, not a tube bead?	4	-	-	4
3	Purple, translucent/clear, cylindrical, 8.5 mm long, 4.5-6.0 mm dia.	5	1	2	8
4	Purple/purple-blue, transl./clear, sub cylindrical- spheroidal, typically 4.8x5.8 mm, relatively uniform.	24c	-	2	26
5	Brilliant blue, translucent/clear, spheroidal rounded, 3.0x4.0 mm, uniform.	1	-	8	9
6	Light blue, opaque or translucent, spheroidal, wound? 6.5x8.3 & 8.0x9.5 mm.	2	-	-	2
7	Deep to medium blue & aquamarine, translucent, subcylindrical, 2.4x3.0-6.8x6.8 mm.	342d	249b	22	613
8	Red-pink (salmon), clear or translucent, rounded, slightly biconical, moulded?, typically 4.4x6.6 mm.	6	-	-	6
9	Pink-mauve, opaque, subcylindrical, 2.6x3.7 mm.	1	-	-	1
10	Red-brown, opaque with transparent green or amber-green centre, cylindrical to spheroidal, typically 5.2x6.0 mm, dia. from 4.6 to 6.5 mm.	241a	21	1	263
11	Cornaline d'Aleppo like above, cylinder, typically 7.7 mm long x 5.6 mm.	2	-	2	4

12	Red transparent over opaque white (white-lined Cornaline), typically well rounded, 4.7-5.7 dia.	39	82b	61	182
13	White, opaque, subcylindrical variable, 2.1x3.1 mm to 5.2x7.3 mm.	79	5	16	100
14	Green, clear, spherical split half, 13x15.3 mm	1	-	-	1
15	Light cupric green, bleached/eroded, ends flat, 2.6x4.0 mm, burned blue?	-	-	2	2
16	Exceedingly tiny, blues, aqua, white, opaque or translucent, rounded, 1.0x1.7 mm to 1.9x2.4 mm.	5	2	9	16
17	Pale purple (discolored, burned?), swirls at end may indicate wound beads.	e	-	-	e
	TOTALS	1169	413	132	1714

Notes to Table 5.2

a. Along the front wall there was a concentration of 355 black beads, 197 red with clear centre and 15 others.

b. An apparent string dropped at the outer entrance to the tunnel contained 246 beads: 43 black, 157 blue (group 7) and 46 red with white centre (lot ScId-2:17). These tend to be small but are not completely uniform. Many of the blue subsequently have disintegrated in storage.

c. Twenty-two of these were found together with 19 white and 10 other beads (lot ScId-1:9). They tend to be uniformly sized.

d. Of the blue beads, 191 dark blue were found together strung on two-strand twisted fibre (lot ScId-1:8). These tend to be uniformly sized at about 5.m mm diameter.

e. Counted among Group 4.

Several attempts were made to identify the dyes, but the results were not definitive. During cleaning there was no sign of fugitive dyes, e.g., no change in color, but from the results of the tests employed, it was not possible to identify either the blue or the black dyes on the wool. Infrared spectroscopy, including also attenuated total reflectants (APR), failed to give any information about the blue dye. The hydrosulfite test (Hofenk-de-Graaf) indicated that the blue dye was readily and irreversibly reduced to a colorless form. Therefore, it is unlikely that it is indigo. Tests carried out on the black dye did not give conclusive results; however, they were negative for logwood and tannins.

Leather Suspender Strap (Pl. 3G). This commercially-produced strap has a tight riveted loop at one end and a cut eye-slit at the other broader end. The rivet is of light-colored metal alloy or plated metal. Although it is about 100 years old, the leather is well preserved and reasonably flexible. According to Pat Lockwood (personal communication), Historic Sites Service, Ottawa, the piece is a commercially produced suspender strap. She doubts that it can be closely dated. Parenthetically, no pieces of Native tanned hide or skin and fur objects were recovered from any of the house excavations.

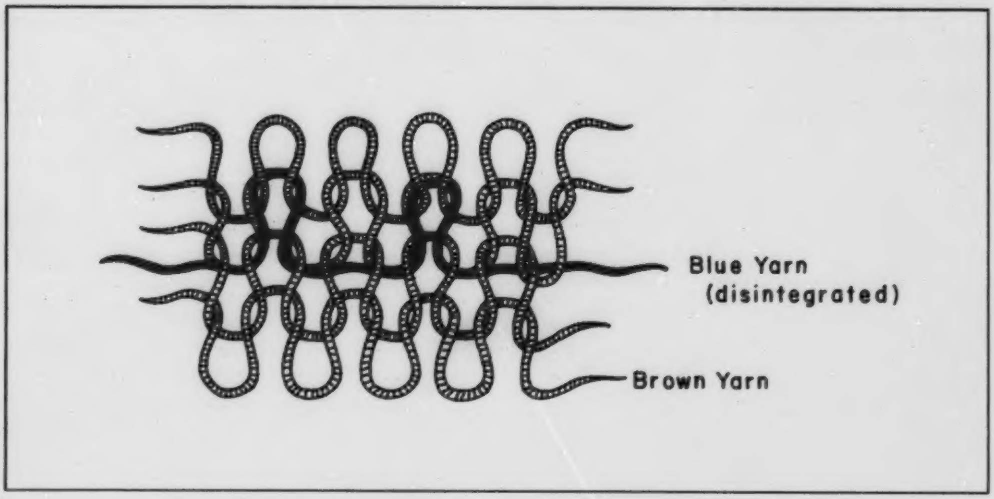


Fig. 5.2. Fabric weave from Lake Creek

Stone

Hide Scraping Stones (N=15, Pl. 6). Hide scraping stones range from boulder flakes, with wedge-shaped cross-section and one curved cortical surface, to flat trimmed, tabular, ulu-shaped scrapers referred to as tcithos, chithos or schist bifaces by archaeologists. Considered as a lot, the scrapers are variable: true boulder flakes are not well represented (Pl. 6D). In some cases flat water-worn shingles have been worked bifacially to form a working edge (Pl. 6C, G), while others have been split and the interior section trimmed to form the implement. With the exception of the three noted below, all have a blunt, bifacially trimmed working edge, a straight more or less unprepared thick back and are made from sandstone and graywacke. In at least seven cases the edges appear to be smoothed from use. These pieces range in length from 102 mm to 184 mm, excepting one 67 mm specimen.

Two from Lake Creek and the smallest scraper, which is from the Kayak site, differ from the others. These three are edged around the total perimeter and lack the characteristic straight back (Pl. 6A). Staining from red pigment is found on all Lake Creek specimens, to a slight degree on two from the Kayak site, on three scrapers from Okak House 1, and also to a slight degree on the two specimens from House 2. Intensive red paint stains may be found on one or both sides of a specimen but tends to be absent at the working edge. This could indicate that at least in some cases the stones may have served as palettes; but on the basis of direct association, use of red paint in the hide working process is suspected. Oral tradition confirms the latter assumption.

Abrasive Stone (Bar Whetstone) (Pl. 5C). A sandstone bar of rounded irregular to subrectangular cross-section is tentatively identified as an abrader. It is 127 mm long. The greater extent of one side and a few local areas elsewhere have been worn smooth. Wear includes subdued crosswise grooving.

Strike-a-light (Pl. 3A). An intentionally battered grey chert pebble weighing 28 grams, or less than one ounce, is identified tentatively as a strike-a-light. There also is an apparently unused 33-gram fragment of a fractured water-rolled black chert pebble from the Kayak site.

Red Paint Mixing Basin (Pl. 7). A red paint mixing basin was found behind a rear corner post in the house at Lake Creek. This 310-mm-long flat cobble has a well defined 170-mm-long natural depression. Except for minor percussion scars on the outside and a ground facet on the rim, the entire object is natural and has a closed irregularly shaped, water-smoothed basin. Red stains are distributed over the entire upper surface, inside and outside the basin. A red paint mixing basin, similar to the one described here, was seen in use in Allakaket in 1968. One additional cobble and a flat boulder found on the floor at Lake Creek, together with the hide scraping stones noted above, also have red smears.

Red Paint Stone (N=7, Pl. 3B). Chunks of red pigment stone are limited to the Lake Creek collection, but from the distribution of stained scraping stones red mineral pigment also was used at the other houses. The seven lots of fragments collected may represent only four or five stones. These are badly crumbled, but one piece about the size of a small fingernail is almost complete and intact. It is the faceted remnant of a hand-held piece of pigment that had been reduced by abrasion to produce red powder. A larger irregular, spheroidal lump, 30 mm to 40 mm in diameter (Pl. 3B), that was partially reconstructed from fragments in the laboratory, looks like a fired clay ball. Some specimens display a granular, textured pattern of fracture lines similar to those seen in some clays, but others do not. Color zonation on this specimen, as well as on others, indicates that it was fired. These have relatively unoxidized grey interiors with red exteriors. Several abrasion facets can be seen on the refitted specimen. Apparently, the pigment stone was reduced to a powder by abrasion, not by crushing. Its mineralogical identification is discussed in Chapter 6.

Traditional red paint made from pigment stone like that described here was still in use on the Koyukuk in the 1970's. Oral tradition on the use of red paint collected during the ethnographic phase of the Koyukuk River Culture History Project describes its earlier use, confirms that the stone itself was fired, and provides a recipe for making the paint.

Bone Artifacts

Snowshoe Webbing Needle. The only formal bone implement recovered from the houses was a snowshoe filling needle from the Okak Site. Unfortunately it was lost. It was carefully packed with birchbark sheets in a large carton in the field and must have been discarded with the packing material when the shipment was unpacked in the laboratory. This needle was a flat bipointed implement with central perforation, approximately 10 to 12 cm long, similar to specimens from the Kobuk River (Giddings 1952: Pl. XXXIII 20-21), except that the eye hole in this Koyukuk example was round and perfectly centered. It was found above the floor layer and may have been placed overhead in a crevice in the ceiling.

Miscellaneous Bone Items. Several pieces of worked bone in the collection are either not finished or are unidentifiable implements. Others are faunal elements with cutting marks and fractures.
Pin (Pl. 3E). A slender 131-mm-long bone pin from the Okak site is roughly and imperfectly whittled to a point at each end. The shaft is irregularly round in cross-section. It is smooth although fabrication marks are visible, including crosswise striations apparently left by a file.
Large pin (Pl. 4B). A heavier 180-mm-long bone rod is made from the thick, compact layer of a longbone, possibly from moose. It is roughly hewn to a taper at each end, but the mid-shaft area is reasonably well formed. Longitudinal manufacturing striations dominate the surface but knife cuts and file marks are also present.
Worked bone (Pl. 3D). The object illustrated has localized cut facets on the edges and faces but it retains the form of a cervid ulna fragment. The missing small end may have been pointed for use as an awl.
Barb (not illustrated). This fragment of an unfinished item, probably antler, resembles a harpoon barb.
Antler object (Pl. 4G). A finely finished curved antler piece from the Kayak site is roughly cut, splayed and fractured at one end. The missing end was carefully removed.
Marked bone splinter (Pl. 4C). A 170-mm-long longbone splinter, found in Okak House 2, shows two sets of short parallel hachures. One set consists of a 36-mm-long row of 17 relatively evenly spaced sharply cut diagonal marks. It is truncated by a break in the bone. The second set is shorter and less clear. The latter may be attributed to a "chattering" motion during butchering, but the first row of hachures obviously was cut intentionally. This piece does not appear to be an implement.
Cut bear rib. A short shaft portion of a bear rib from Lake Creek is smoothly cut at a very acute angle leaving a 42-mm-long bevel. The other end is broken. There also are tool striations on this piece; therefore I think that it was intended for some implement or accessory.

Wood and Birchbark

Skewer Sticks (common, Pl. 9A). The most common indigenous artifacts excavated are skewer sticks, although none were recovered from the Okak site. Due to fragmentation and poor preservation only one of approximately 20 specimens was retained. The skewers resemble short unfinished spears, and are better known as cooking sticks. The major part of the roughly whittled shaft tapers from a little less than to slightly more than 10 mm in diameter. Near one end of the skewer, it becomes heavier and thickens to at least 20 mm. Fish or meat that was to be cooked was skewered on the slender part of the shaft, then after the larger of the ends was shoved into the ground near the hearth, the skewered food was leaned over the fire. Plate 9A shows three specimens lying flat on the floor near the front wall at Lake Creek. These are 73 cm long. Other specimens are about this same length, although one from the Kayak site was 90 cm long. Skewer sticks like these are still used by local residents who identified the ones that were excavated from the house sites. From 1969 until 1972 I, also, used them during the summer to grill my fish when working at fish camp.

Board Implement. The small plank found with the three skewer sticks at Lake Creek (Pl. 9A) appears to be more than 50 percent complete, although one end has disintegrated. It measures 120 by 285 mm and is about 10 mm thick. Although it is in poor condition, this piece is recognized as having been well finished, particularly along the sides. It probably was an implement or accessory. There are a few knife scratches on each face, but these are insufficient in number to indicate that it was used as a cutting board.

Wedge (not collected). A slender wooden wedge found lying in the tunnel at the Kayak site was photographed in the field then discarded because it had disintegrated to the point that it could not be shipped. It was 270 mm long but only 30 mm wide. Except for its wedge-shaped end, this split wood implement was otherwise unmodified, although the poll end showed slight crushing of the grain. During the early 1970s wooden wedges were still used to split logs into planks and long strips.

Notched Implement (Fig. 5.3). A 63-cm-long bar, notched at both ends and pointed at one, has been partially reconstructed by following intact cut notches and facets found on the more resistant areas of the badly decayed specimen from Lake Creek. Some Athapaskan and Inupiat residents suggested that this object might have been used as a pot hook that was hung from a ridge pole to suspend a cooking basket over the hearth.

Prong (Pl. 2F). A very sharply pointed, gradually tapered, well preserved whittled prong was recovered from the Kayak site. It is 106 mm long, although incomplete.

Wood with Design Motif (not illustrated). A short, single-line, zig-zag design appears on a partially carbonized artifact fragment.

Diverse Pins, Prongs and Rods. All of the following objects are complete, or nearly so. One rough bipointed prong and fragments of a shaft are from Lake Creek; the rest are from the Kayak site. No wooden artifacts were recovered from the Okak site, although preservation of structural wood there was reasonably satisfactory and birchbark was recovered.

Rod (not illustrated). A well preserved 215-mm-long, 20-mm-diameter, slightly tapered, rod has one end cut off evenly and the other end irregularly.

Bar (Pl. 4D). This bar is 127 mm long, 14 to 16 mm square in cross-section. It is well preserved.

Peg (Pl. 4H). The ends and body of this 49 mm long, 6-7 mm diameter, peg are well finished.

Large peg (Pl. 4I). A 71 mm long, well preserved, large peg has circular ends but is subrectangular in cross-section away from the ends.

Whittled peg (not illustrated). This roughly whittled peg is 79 mm long and 10 mm diameter.

Conical piece (not illustrated). The moderately well-hewn piece is unfinished and poorly preserved. It is 82 mm long, 15 mm in diameter at its large end and appears to have been cut off a shaft.

Tapered, curved object (Pl. 4F). This curved tapered object is 84 mm long, circular incross-section, with ends that are either cut off or finished squarely. It is well preserved.

Pins and prongs (Pl. 4E). The two roughly hewn wooden objects are a 122 mm long pin and a 130+ mm long prong. The former may be asymmetrically bipointed, but it is difficult to be certain because of its poor preservation. The other essentially has a single taper.

Other wood (not illustrated). Two fragments of a wooden shaft 11-12 mm in diameter were recovered from Lake Creek.

Resin

A powder can had been nearly filled with a mixture of spruce resin and charcoal, some of which was found melted together.

Birchbark and Baskets

Birchbark was used for structural elements in dwelling construction and for other purposes, including containers. Structural bark has been described in the preceding chapter. Several basket-trays were recovered and are described here.

Basket Trays (N=5, Pl. 8-9). Stitching patterns and descriptions for the five basket trays is given in Tables 5.3 and 5.4. A distinctive feature of these is their folded seamless corners. This type of corner construction is similar to that for metal pans described earlier. Although the present specimens are crumpled, damaged, and in some cases fragmented, they are sufficiently complete to be recognized on the basis of their form without recourse to attribute analysis. In other northern sites often only smaller fragments of sewn birchbark are recovered and construction is difficult to reconstruct. Detailed information on sewing hole patterns for baskets recovered from the Koyukuk sites is provided in Table 5.3. The holes penetrate the bark at an angle and thus the same measurements do not necessarily obtain for both surfaces of the sheet.

The Koyukuk baskets recovered are essentially shallow rectangular trays. Usually the corners are sharp and the sides vertical, although one specimen with rounded ends and another with sloping sides was recovered. Corner flap folds are external, folded onto either the sides or the ends. In ethnographic specimens, rounded corners and ends are more characteristic of deeper baskets. Unfortunately, none of this type were recovered. Good measurements were obtained between folded

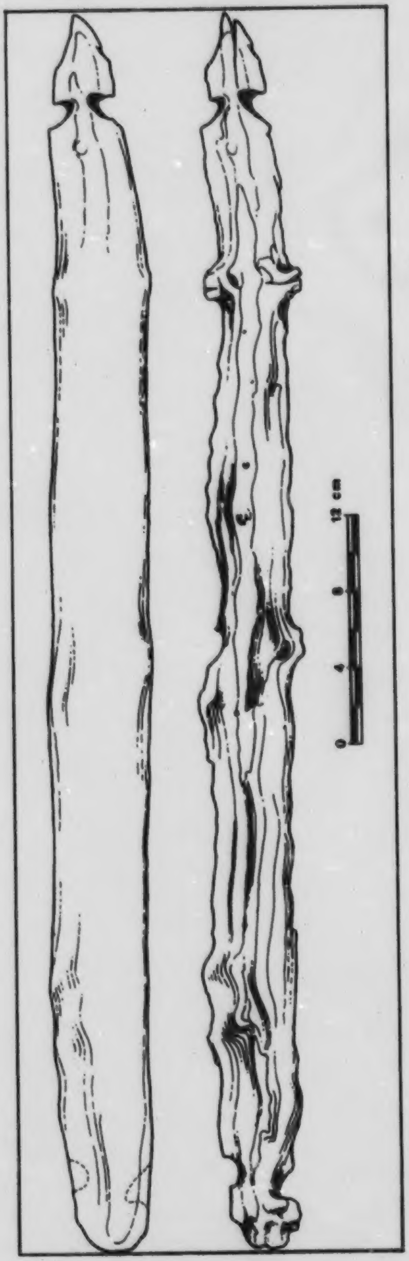
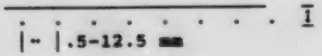
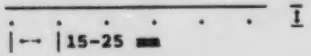
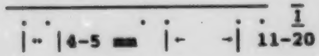
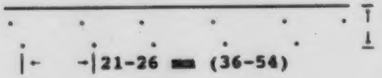
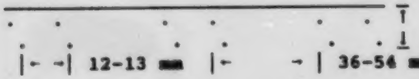


Fig. 5.3.
Sketch of notched wooden implement.

TABLE 5.3. BASKET STITCHING HOLE PATTERNS

Pattern	**Location** **Side**	 **End**	**On Specimen**
Rim	x	-	ScIc-1:46
 10.5-11.5 mm .5-12.5 mm			
 11 mm 15-25 mm	x	x	SdIb-1:49*
 8-9 mm 4-5 mm 11-20 mm	x	x	SdIb-2:1** Sides only
 6-11 mm (4.5-11) 6-9 mm (5.5-7.5) 21-26 mm (36-54)	x	x	ScIc-1:44
	x	x	SdIb-2:1** Ends only
Dimensions for ScIc-1 side stitching holes are in parentheses.			
 7-11 mm 5.5-7 mm 12-13 mm 36-54 mm	x	x	SdIb-1:43
The end holes are angled in the direction opposite to that of the sides.			

*Spacing is for SdIb-:49 sides, it has 9-14 mm end spacing.
**SdIb-2:1 is listed twice because ends and sides show different stitches.

interior basal corners and the occasional, intact uncrumpled wall. Total dimensions of the bark sheet, if it were flattened, provide further information on basket form. Interesting features of these baskets, although not recovered with certainty for all specimens, are the bark strips and accompanying thin wooden rods that were sewn onto the outside to reinforce the rim. On ethnographic examples the reinforcing rods are crimped and bent around the corners, but all fragments recovered from the houses are broken at the corners. There is no indication of what these trays were used for, however, they may have been individual food containers. In the interior bottom of one, there are a number of light cutting marks.

Faunal Remains

Faunal remains collected from the Lake Creek, Kayak and Okak sites are listed by site and species in Table 5.5. The first number shown by site for each species listed indicates the number of

TABLE 5.4. DESCRIPTION OF BASKETS

Basket	ScIc-1:44 Lake Cr.	ScIc-1:46 Lake Cr.	SdIb-1:43 Kayak	SdIb-1:49 Kayak	SdIb-2:1 Okak
Base	35 x 24	18 x 15	19 x 18	24 x 15	28 x 18
Height	10 cm	6 cm	6.5-7 cm	8-9 cm	8-9 cm
Sheet size	59 x 44 cm	33 x 30	36 x 35	47 x 41	56 x 36
Reinforcing	Top exterior discolored where strips had been	No certain evidence for bark strips	Bark strips & rods around top perimeter	Bark strips, no rods recovered	Stitching pattern suggests once there
Stitch hole pattern	2 (paired) rows at ends and both sides	None at ends, 1 row at each side	Sets of 4 holes, 2 ea. inner-outer	Single row at ends and sides show that stitches looped over edge of basket	2 end rows, 1 side row; impressions
Notes	Ends near vertical, sides slope	Ends near vertical, side-bulge makes top c 18 x 18	Ends & sides vertical	Ends very slightly curved, walls slope to 30 x 20+ at top	Ends curve or project, sides slope or bulge slightly

bones or bone fragments identified (NISP); and those shown in parentheses represent the minimum number of individuals (MNI) for that species. My MNI count was calculated on the basis of the most frequently occurring element, e.g., the number of right hare tibiae recovered, etc. In many cases an individual is represented by a single bone

Remains from larger mammals, especially moose, are badly fragmented, thus the figures may over-represent the number of individual bones present. Many fragments and chips are not listed by species, but most of these can, with reasonable certainty, be counted as moose. Bones that were reconstructed from as many as ten fragments are counted here as a single specimen. As often is the case (Grayson 1985), the larger the sample for a species, the better the representation per individual. Thus, for the Okak site nearly 20 elements have been identified per moose and 12 for each snowshoe hare, both represented by totals of 58 fragments each. Conversely, in the Lake Creek and Kayak houses where the bone counts for hare and bear are only 23, 20 and 13, respectively, the number per individual drops to 5.75, 5.0 and 6.5.

Large mammals native to the area are moose, caribou, black bear and the occasional brown bear; and, not far away on the south flanks of the Brooks Range, Dall mountain sheep are accessible. As discussed earlier, the large number of small and medium-sized mammals characteristic of the boreal forest includes several of economic importance for fur or food, such as lynx, marten, mink, weasel, otter, wolverine, red fox, wolf, muskrat, beaver, porcupine, and snowshoe hare (rabbit). Arctic ground squirrels are available in hilly country and hoary marmot in the foothills of the Brooks Range. From this entire list of small and medium-sized mammals, only hare is abundant among the faunal remains and many other species are absent. Animal respect practices as well as seasonality of occupation of the houses likely play an important role in the presence or absence of bones in these sites.

Discussion of Faunal Remains by Individual House.

Lake Creek. The Lake Creek house yielded remains from seven mammal species, although only black bear is abundant in this small 1.5 kg lot. Interestingly, among those present is a probable very small red fox, although it has not been determined with certainty that this is not Arctic fox *Alopex*. Some rodent and dog-chewed specimens, as well as fractured and cut bones are also present.

Kayak. Scant remains from five mammal species, a few fish bones and two duck bones were recovered from this house. This small lot of material weights about 0.2 kg. Interestingly, a single tiny fragment of bear bone was recovered from this house; but only hare is common. One fragment from an unidentified large mammal longbone was pieced together from eight partially calcined fragments.

Okak. Moose is preeminent among the Okak remains and hare is very well represented. Eight species are present. Remains from the tunnel weigh 1.6 kg and the total from the site amounts to 4.4 kg. In the unidentified group most of the large mammal bone fragments are presumably moose judging from their robustness and the predominance of moose among identified bones,but bear and caribou probably also are included. And, in addition to those from the House 1 complex, two moose bones were collected from the tunnel of House 2. These, however, are not shown in the list. Cache pit remains are included with those from House 1 in Table 5.5, inasmuch as they have been related to it by matching cache pit fragments with those from the house. These include moose, bear and hare. The six bear bones are variously unaltered, chopped up, snapped transversally, split vertically, and chewed by dogs. Many of the small mammal fragments, among which there are numerous hare teeth that are not shown in the total, appear to be from disintegrated feces. Tiny bone pieces, teeth and fish bones, are present among the coprolites collected.

All Moose bones are fragmented except in the case of phalanges and some other foot bones. Even one phalanx is split. Fragmentation apparently was for both the extraction of marrow and to obtain raw material for implements. Some especially well shaped bone sections were not fashioned into

TABLE 5.5. FAUNAL REMAINS

Species	ScIc-1 Lake Cr.	SdIb-1 Kayak	SdIb-2 Okak	Total
Mammal				
Caribou *Rangifer tarandus*	3 (1)	1 (1)	-	4
antler	+	+	-	+
Moose *Alces alces*	3 (1)	1 (1)	58* (3)	62
Possible moose			6	6
Cervidae		4		4
Small mammal, fragments and chips	-	8	15	23
Large-med. mammal chips under 8 mm	19	1	128+	148+
Same, 8 mm or larger	6	1	20	27
Black bear *Ursus americanus*	20 (4)	1	6 (1)	27
Bear species *Ursus* sp.		3	1	4
Possible bear			1	1
Red fox *Vulpes vulpes*	-	-	1	1
Fox species, probably *V.v.*	2			2
Lynx *Lynx canadensis*	-	-	1	1
Porcupine *Erethizon dorsatum*	2 (1)	-	2 (1)	4
Muskrat *Ondatra zibethicus*	1 (1)	-	-	1
Snowshoe hare *Lepus americanus*	13 (2)	23# (4)	58 (5)	94
Marten *Martes americana*	-	2	-	2
Hoary marmot *Marmota caligata*?	-	-	1	1
Total Mammals	73	38	302	413
Bird				
Pintail *Anas acuta*	-	1	-	1
Duck species *Anas* sp.	-	1	-	1
Grouse/ptarmigan *Tetraonidae* sp	2	-	2	2
Other bird	1	-	25	26
Fish (mostly scales and ribs)	-	62	31	93

Teeth are excluded lest they not be consistently reported by different investigators, foot bones are included. The minimum number of individuals (MNI) is given in parentheses. The specimen count is for the number of identifiable specimens (NISP) modified to collapse to 1 the representation of fitted fragments from a single element.

* Prior to fitting fragments together there were 83 NISP.

# *c* 100 additional intact hare bones from two individuals found in two tight clusters appear to be from animals that died in voids along the sides of the caved structure.
Nomenclature follows Manville and Young (1965), except *Vulpes vulpes* replaces *V. fulva*.

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implements but possibly saved for potential use. Some show cutting and chopping marks. Many bones from various parts of the body are chewed, some only lightly, but others so extensively that the epiphysial ends have been completely removed. Pieces from the cache pit as well as some from the house are affected, showing that the former is a secondary site of deposition. Avian remains are represented primarily by shaft fragments from small birds.

Discussion of Fauna by Species

Caribou *Rangifer tarandus*. Both in the 1970s and in the recent past, the harvest of caribou has exceeded that of all other large mammals in the upper and middle Koyukuk drainage. Faunal remains recovered from the houses, however, do not reflect an abundance of caribou. Parts of the animal represented by the four specimens are the lower leg (talus) and front limb (humerus, radius-ulna).

Moose *Alces alces*. A fragment of an ischium only was found in the Kayak house. At Lake Creek the three specimens collected are 2 innominates and part of a rib, whereas nearly every part of the body is represented in the collection from Okak House 1: ribs, various parts of the vertebral column, skull, scapula, humerus, radius, innominates, femur, tibia, metapodials and foot bones. Moose bones are extensively fractured, cut, modified and chewed. The number of pieces in the sample from all houses identified is nearly 100, but many are fitted together or are not counted because of their small size and tentative identification. The MNI is based on the left tibia.

***Cervidae*.** The small fragments in this group probably are moose or caribou. To them may be added other unidentified small fragments. One additional cervid, the Dall mountain sheep *Ovis dalli*, is potentially available from the nearby Brooks Range. No sample of this species was available in the laboratory for comparison, thus I cannot state with certainty that it is absent from the collection.

Black bear *Ursus americanus* and bear species *Ursus* sp. Black bears are plentiful throughout the region and brown bears occasionally are found in the river valleys as well as near the mountains. Specimens identified as bear, or possibly bear, include a tiny immature rib and a sternebra, a piece cut from a rib that is somewhat heavier than the mature *U. americanus* ribs used for comparison and a chopped up fragment that may be from a large bear.

Unlike those of moose and hare, bear remains show a skewed distribution favoring both the forepart of the body and elements that may provide material used in making implements. This distribution is as follows (NISP):

Tibiae	2
Fibulae	5
Innominate	1 or 2 immature
Femora	1
Hind element subtotal:	9

Sternebra	1
Ribs	3 (1 of which is very immature)
Scapula	1
Humeri	4
Radii	6
Ulnae	7
Front element subtotal:	22

Of the hind quarter elements, the five fibulae appear to be well suited for manufactures. All the articular ends (10 ends) are snapped, chewed off or cut off and some shafts show cut marks. It is possible, however, that the ends were removed as a butchering technique. Brown bear ulnae or radii reportedly were used to make spears, and I am almost certain that dense black bear bones also were used for artifact manufacture. Nevertheless, many of the present specimens are broken in such a manner that they appear unsuited for further use. I do not know why the ulnae were broken, because their bone marrow cavities are very small. They would not have become broken through trampling, carnivore chewing or caving of the structures. Secondary utilization appears to be the reason for saving the bear bones, but from the sample recovered the purpose for which they may have been intended is unclear.

Red fox *Vulpes vulpes* and fox probably *V. vulpes*. Red fox is the primary fox species in the area. A single cranium was found in the outer end of the entrance to the Okak house but its position may be secondary because if it were there when the entrance was in use, it likely would have been crushed underfoot. Two possible red foxes are represented by an innominate and a mandible from Lake Creek. The innominate is in the size range for either a small red fox or an arctic fox *Alopex*. Size, a characteristic that has limited diagnostic value for identification, places it with the former. The mandible has *Alopex* characteristics, except in its dentition which is in the *Vulpes vulpes* size range (Anne Rick communication 14 August 1978). Murie (n.d. Box 1 Folder 2) notes that a few arctic fox are taken on the Alatna River (probably well above its mouth) and that one was taken in 1916 below Hughes, which is far below the customary range. Rausch (1951) also records one from Henshaw Creek near Allakaket.

Lynx *Lynx canadensis*. A single scapula only.

Porcupine *Erethizon dorsatum*. The four elements recovered consist of two mandibles (halves), one ulna, and a humerus. The mandible with incisor may have been used as a carving tool, although the diagnostic end of the incisor is missing and the specimen is not modified.

Muskrat *Ondatra zibethicus*. This locally abundant taxon is represented by one femur.

Snowshoe hare *Lepus americanus*. Mandibles are common. Right and left halves, which sometimes accompanied the cranium, are counted separately. Relatively intact skulls also were found along the sides of some houses. Smaller fragments are present in dog coprolites, and ones from disintegrated feces are counted where a distinctive element is recognized (teeth excluded). Hare0 representation (NISP) in the three houses is as follows:

Crania	8 elements
Mandibles	19
Scapulae	5
Humeri	7
Ribs	2
Ulnae	5
Radii	7
Innominates	10
Femora	11
Tibiae	6 (some with fibulae)
Foot bones	13 (metapodials, etc.)

At the Okak site, which is the only one to contain a sufficiently large sample to warrant discussion, the distribution of elements is as expected, except that there are few foot bones, ribs or vertebrae. At no site were any vertebrae recognized. It is obvious that dogs were ingesting hare remains. However, it is enigmatic that vertebrae are lacking while skulls and mandibles are the best represented parts. The preceding discussion excludes the "die-ins" noted for the Kayak site. For these there is no shortage of vertebrae and ribs.

Marten *Martes americana*. Marten is represented by a single mandible.

Hoary marmot *Marmota caligata*. One piece of a marmot femur appears to be derived from a coprolite. This animal is available in the foothills of the Brooks Range thirty to forty kilometers from the Okak site.

Except for the marten and possibly the fox, all mammals recovered were utilized for food; and, if the period of occupation represented in these sites was one of deprivation, the marten and the fox also may have been eaten. In addition, all but the porcupine provided furs and hides that were traded as well as utilized locally. A number of animals known to have been taken by the Koyukon are absent, but several of these are fur bearers which might have been skinned and the carcasses discarded away from the settlement. Others were only uncommonly killed. The sparse representation of muskrat is not especially surprising because it is usually taken in the spring; but beaver, another meat and fur animal common in the area that is snared in winter, is also absent. According to disposal and respect rules for animal remains, despite seasonality, they nevertheless should not be present. But, neither should the others.

It would be hazardous to assess seasonality from these remains inasmuch as the meat and bones of large mammals could be kept for several months during cold weather and small mammals could be dried and stored during other months. However, inasmuch as the houses are late autumn and winter dwellings, these remains can be taken as de facto indications of what was consumed at that time.

Other Contents

Dried Feces

Dried feces (coprolites) were found in the tunnel of the Kayak site where no sample was taken, and in the tunnels of the two Okak houses from which samples were collected. Coprolites also were found on the floor exposed by testing at the rear of Okak House 2.

Not all pieces were intact or collected, and the tiny bone fragments and hare teeth found during excavation may be from disintegrated feces. The coprolites have not been studied, but examination of broken pieces shows that they contain fish vertebrae and bone fragments from various parts of small animals. There are also tiny bone chips from relatively large mammals. Some scats are not particularly large, being short or almost globular with pinched ends and 16 mm to 18 mm in diameter. Others are 20, 21 mm and 25 mm in diameter. There should be little doubt that these are from dogs, considering the presence of chewed bones in the houses and sharp bone fragments in the feces.

Artifact and Faunal Distributions

The distribution and location of artifacts and faunal remains provide diagnostic information. Fauna, beads and other artifacts have been plotted on the floor plans for each house, excepting the sparse Kayak house fauna. Examination of such distributions, e.g., the dispersal of fragments from a single bone, can be important even when the processes responsible for the distributions are not completely understood. An important aspect of such analysis is the information it may provide on utilization of space or household organization. Traditional seating arrangements, based on information collected in 1961, provide the primary model (Fig. 5.4) for interpreting house floor distributions.

Glass Beads

Lake Creek. Fewer beads were found in this house than in the others (Fig. 5.5). Most were located in the front half of the house, particularly in the left corner.

Kayak. Kayak site beads were found in all areas except the right corner (Fig. 5.6), but their distribution in the incompletely excavated tunnel is unknown. By far the largest number of beads was found in the front half of the house where they were: (a) concentrated near the left corner, and (b) tightly clustered in two sets near the right corner close to the side wall. One concentration of 191 beads contained only dark blue ones, accounting for over half of that color from the Kayak house. These were still partially strung on twisted fiber. Nearly all the purple-blue beads were found in a single group with a number of others which together totalled 51 beads. The concentration of 570 beads (576 by one count) located at the front was more diffused, but it also may represent essentially a single spilled lot inasmuch as it contains almost exclusively black and clear-lined Cornaline d'Aleppo beads.

Okak. Half of the beads from this house (Fig. 5.7) were found in a single cluster at the outer end of the entrance tunnel where they apparently had been dropped as a unit. Approximately 20 percent were black beads, 20 percent Cornaline d'Aleppo red with white centres, and 60 percent blue. Most of the black beads were found in this group. Another cluster of 16 beads was located in the tunnel and one of 32 near the rear wall on the left side. Otherwise, they were scattered on the right side of the house, but there were none in the alcove or in the left front corner, and only a few in the central area and along the left wall. In the cluster of 16 noted above, there are 12 blue, 1 black and 3 white beads. The cluster with 32 beads occurred in a 12 by 23 cm area and contained 11 blue, 14 red white-lined Cornaline d'Allepos and 7 red clear-lined Cornaline beads.

Implements and Other Artifacts

Lake Creek. There is nothing outstanding about the artifact distribution from this house. No implements, except a skewer stick, were found on the hearth and there were some areas with sparse distributions (Fig. 5.8). The small 44-item-sample makes it difficult to determine a pattern. Baskets and skewer sticks were found towards the front. Powder can parts were found all over the floor, but such cans probably were reused as containers. Artifacts are nearly equally distributed between the two sides of the house and between front and rear halves, although the types of items found in the front are somewhat different from those in the rear.

Kayak. Distribution of objects between the right and left halves of the Kayak house is approximately equal, but more items were found in the front than in the rear part of the house (Fig. 5.9). Similar to Lake Creek, baskets, most of the hide scraping stones and most of the skewer sticks were found in the front part. A cut piece of metal was found in the hearth.

Okak. The smallest number of artifacts were recovered from the Okak site (Fig. 5.10).

Objects were distributed almost evenly, although sparsely over the various parts of the floor. One artifact was found in the alcove, another in the cache pit, and yet another just outside the left wall. Originally, this one may have been on the roof. The single basket from Okak was found at the front of the house; and one conspicuously localized group of five hide scraping stones was located in the front left corner.

Composite Bead and Artifact Distribution. To overcome the problem of small sample size, composite plots were made for two selected groups of artifacts. These are plotted on modified Lake Creek and modified Kayak floor plans (Fig. 5.11, 5.12). Only minor adjustments in coordinates were required, inasmuch as all houses are of approximately the same size. In selecting items for plotting, which represent the majority of artifacts, I have attempted to portray separately the activities of men and women. This division undoubtedly suffers from critical deficiencies, mainly because of the reuse of powder cans and metal for containers and implements and because the sexual division of tasks is likely to be inconsistent.

According to the ideal seating arrangement (Fig. 5.4), separate families occupied each half of the dwelling. In each half the women worked and slept near the front, the men in the middle, and others such as old people towards the rear. From this arrangement, one would expect women's things to be near the front, men's in the middle, possibly a mixture at the rear, and more or less equal distribution between the sides. others such as old people towards the rear. From this arrangement, one would expect women's things to be near the front, men's in the middle, possibly a mixture at the rear, and more or less equal distribution between the sides. Female-oriented artifacts fit the expected distribution reasonably well (Fig. 5.11). A metal scraper found near the left rear corner actually may be an adze blade, which would shift it from one category to another. Possible male-oriented artifacts show a more scattered distribution (Fig. 5.12), probably for reasons of erroneous gender attribution indicated above, but they do have a greater presence in the middle and rear areas than in the front, as would be expected. The bilaterality of this distribution is reasonably good, and suggest that possibly two families lived in this house. It should be noted that practically nothing was found in the hearth.

The bead distribution can be examined in the same interpretive framework. Ones recovered may consist of strings lost or left behind, scattered beads shed from damaged beaded garments and accessories, beads dropped by seamstresses, and ones stored for intended subsequent use. The first category can pertain to either sex; the second should be responsible for a scatter throughout the house; the third for a scatter near the front; and the fourth for intense concentration, near the front if use was to be by seamstresses. Negative evidence does not always fit this proposed distribution, e.g. there are some blank areas where beads are expected, but possible explanations for this are diverse and their exploration is of little value to us. It is more significant to note concentrations of beads at the front of the house, which are expected, or the lack thereof, which is anomalous. Looking at the individual houses, we find that one corner of the Lake Creek house meets expectations, the other front corner almost misses; one corner of Okak almost fits while the other misses; and one front corner of Kayak fits well while the other one may miss expectations, especially if the 51 beads in a cluster are from a

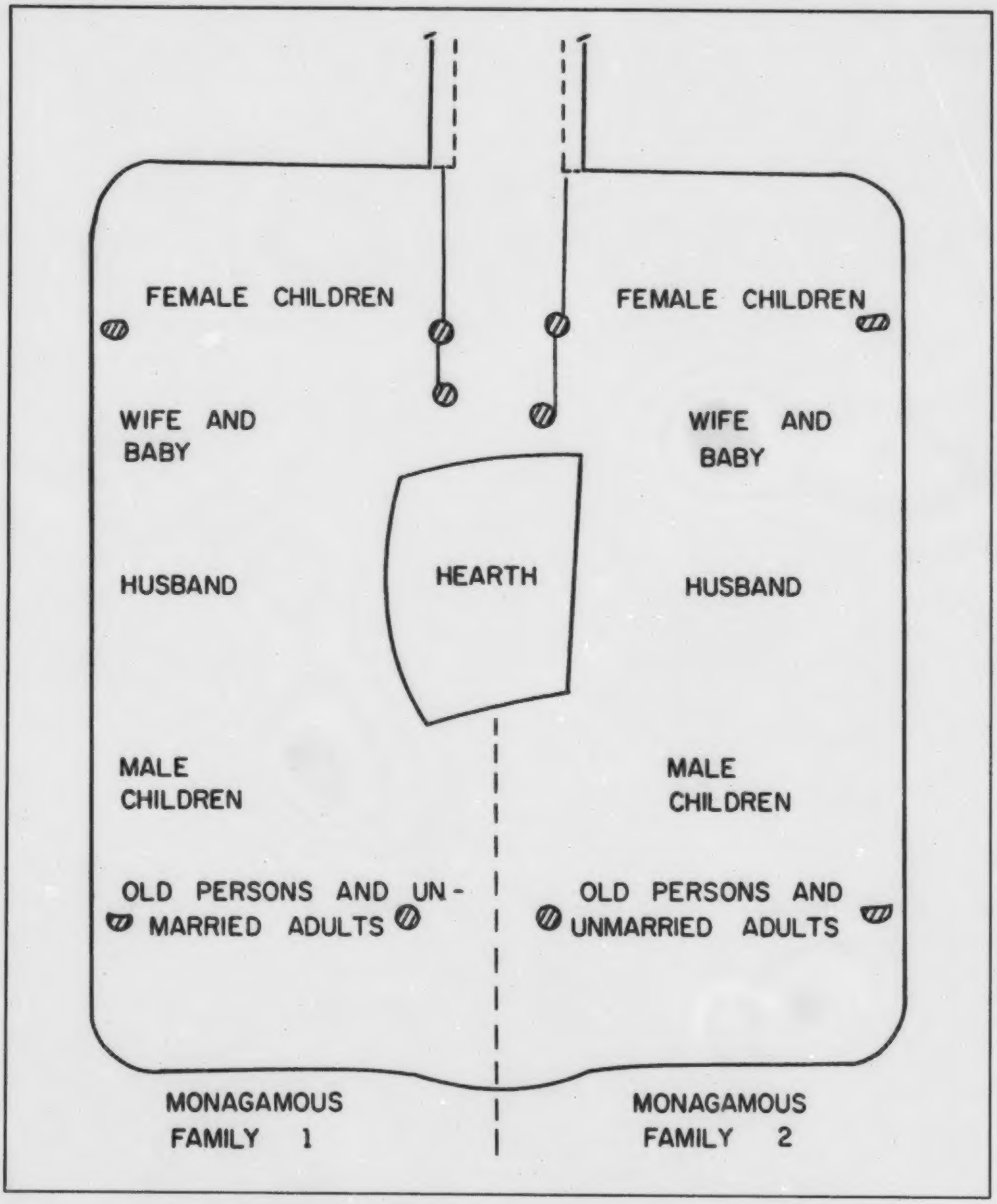
FEMALE CHILDREN
FEMALE CHILDREN
WIFE AND BABY
WIFE AND BABY
HEARTH
HUSBAND
HUSBAND
MALE CHILDREN
MALE CHILDREN
OLD PERSONS AND UN-MARRIED ADULTS
OLD PERSONS AND UNMARRIED ADULTS
MONAGAMOUS FAMILY 1
MONAGAMOUS FAMILY 2

Fig. 5.4. Seating plan for a household composed of two monogamous families.

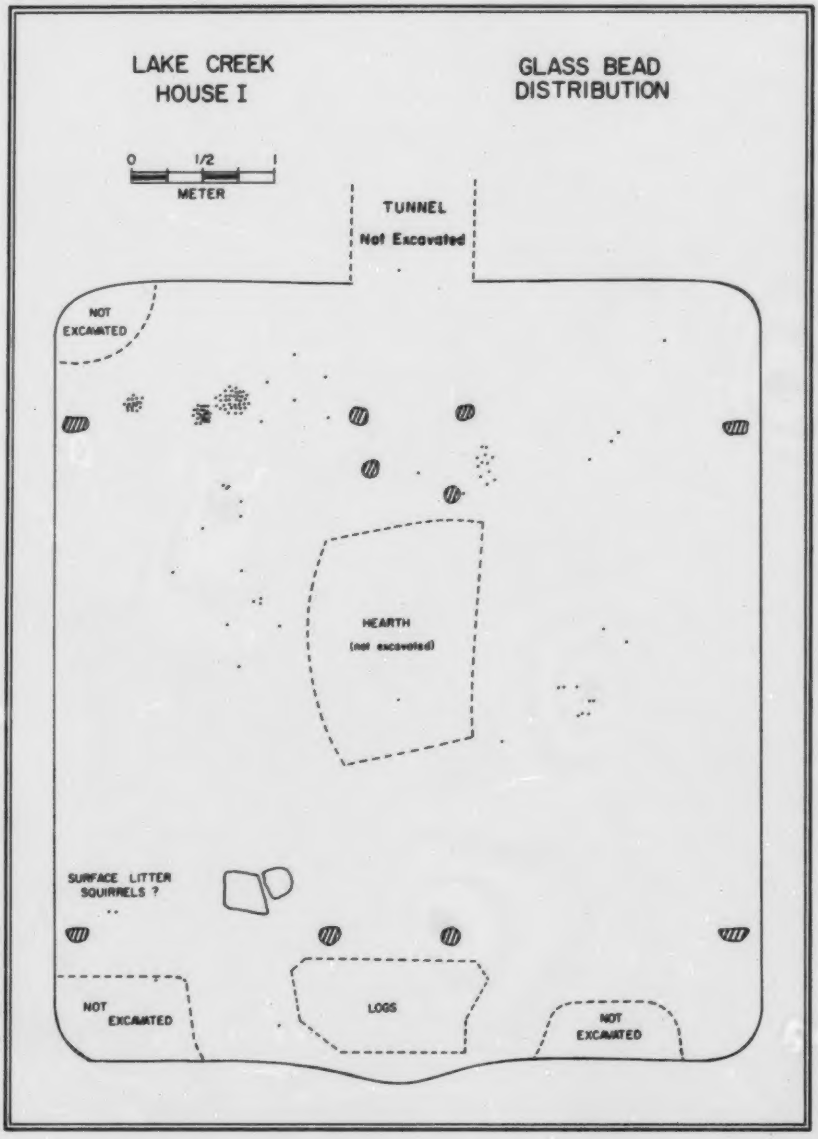
LAKE CREEK HOUSE I
GLASS BEAD DISTRIBUTION
0
1/2
1
METER
TUNNEL
Not Excavated
NOT EXCAVATED
HEARTH
(not excavated)
SURFACE LITTER SQUIRRELS ?
NOT EXCAVATED
LOGS
NOT EXCAVATED

Fig. 5.5. Glass bead distribution, Lake Creek House No. 1.

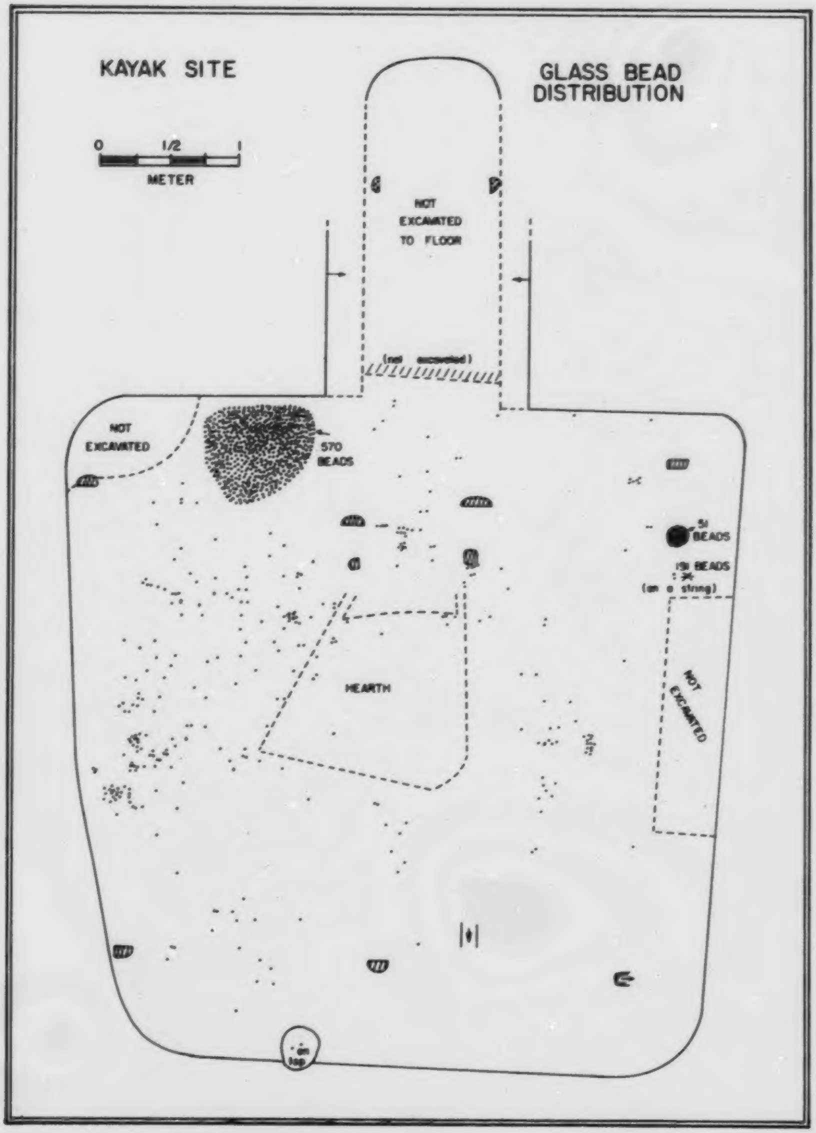
KAYAK SITE
GLASS BEAD DISTRIBUTION
0
1/2
1
METER
NOT EXCAVATED TO FLOOR
(not excavated)
NOT EXCAVATED
570 BEADS
51 BEADS
191 BEADS (on a string)
HEARTH
NOT EXCAVATED
on top

Fig. 5.6. Glass bead distribution, Kayak House.

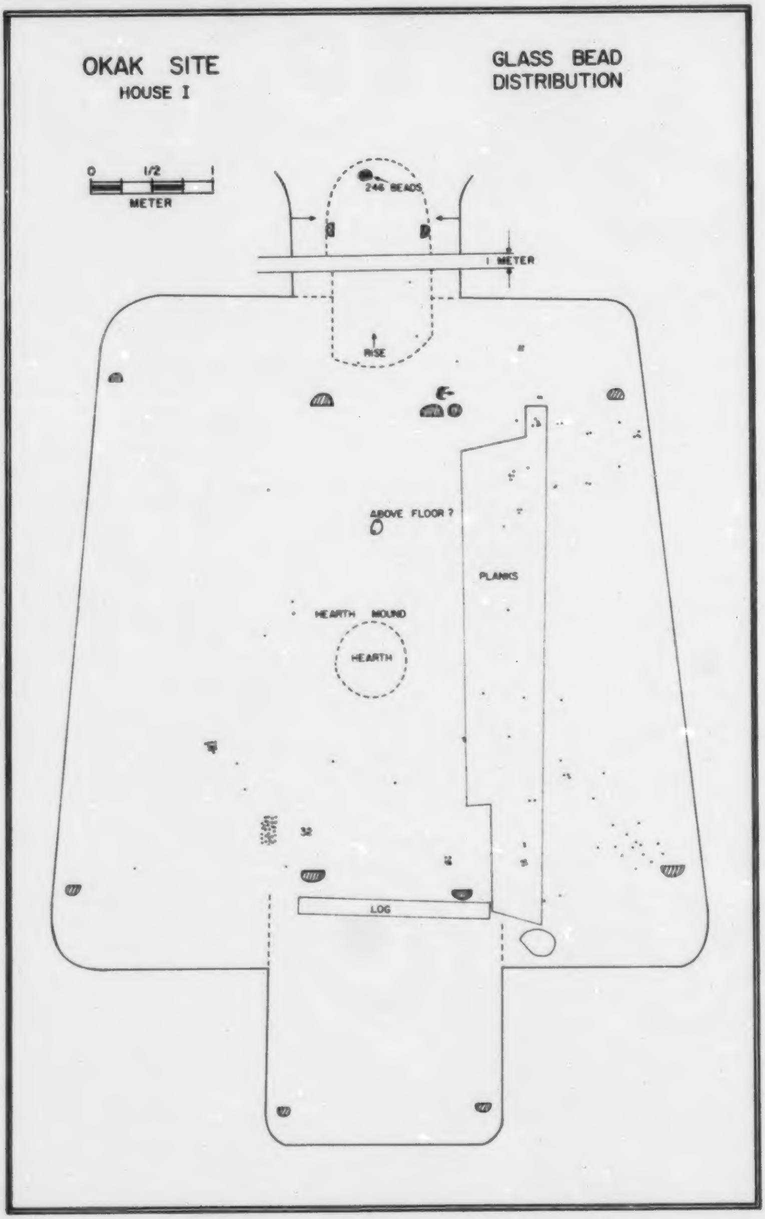
OKAK SITE
HOUSE I
GLASS BEAD DISTRIBUTION
0
1/2
1
METER
246 BEADS
1 METER
RISE
ABOVE FLOOR ?
PLANKS
HEARTH MOUND
HEARTH
32
LOG

Fig. 5.7. Glass bead distribution, Okak House No. 1.

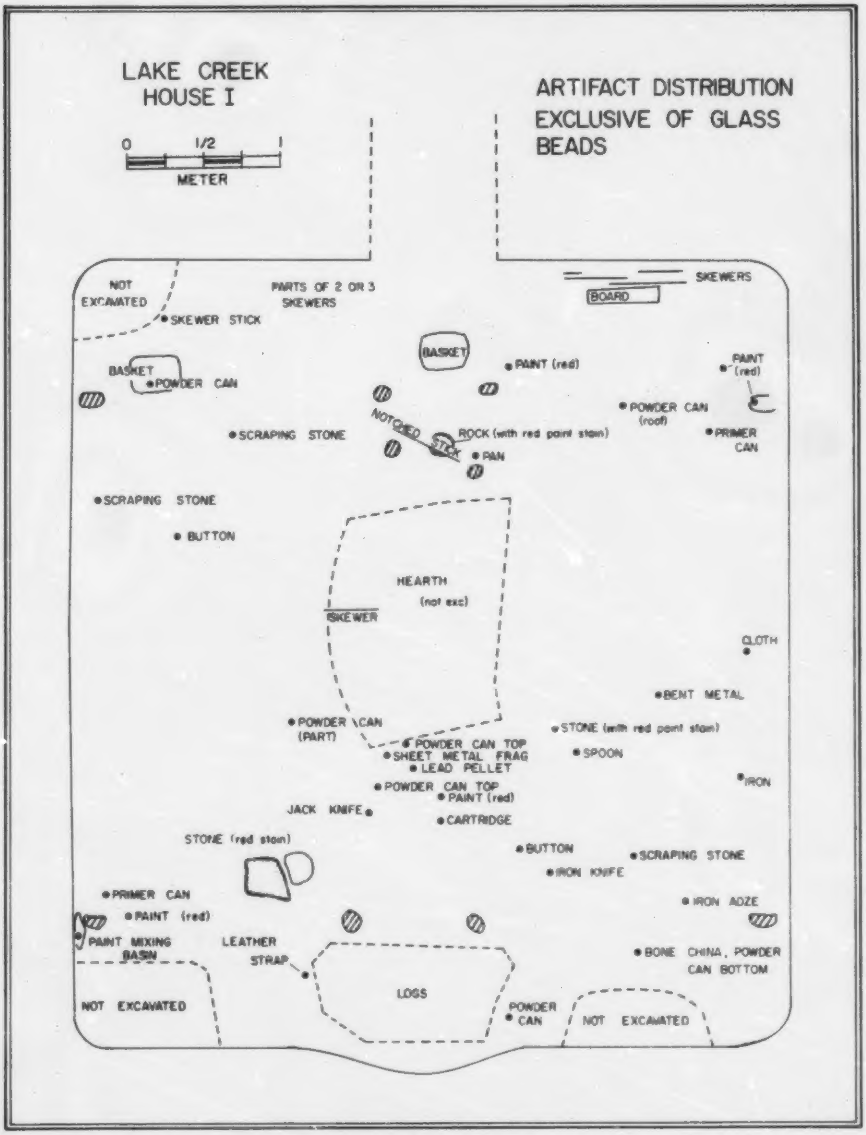
LAKE CREEK
HOUSE I
0
1/2
1
METER
ARTIFACT DISTRIBUTION
EXCLUSIVE OF GLASS
BEADS
NOT
EXCAVATED
PARTS OF 2 OR 3
SKEWERS
SKEWERS
BOARD
SKEWER STICK
BASKET
BASKET
POWDER CAN
PAINT (red)
PAINT
(red)
POWDER CAN
(roof)
NOTCHED STICK
ROCK (with red paint stain)
SCRAPING STONE
PRIMER
CAN
PAN
SCRAPING STONE
BUTTON
HEARTH
(not exc)
SKEWER
CLOTH
BENT METAL
POWDER CAN
(PART)
STONE (with red paint stain)
POWDER CAN TOP
SHEET METAL FRAG
LEAD PELLET
SPOON
IRON
POWDER CAN TOP
PAINT (red)
JACK KNIFE
CARTRIDGE
STONE (red stain)
BUTTON
SCRAPING STONE
IRON KNIFE
PRIMER CAN
IRON ADZE
PAINT (red)
PAINT MIXING
BASIN
LEATHER
STRAP
BONE CHINA, POWDER
CAN BOTTOM
LOGS
NOT EXCAVATED
POWDER
CAN
NOT EXCAVATED

Fig. 5.8. Artifact distribution, Lake Creek House No. 1.

string. Altogether, the bead distribution is compatible with expectations but it fails to support overwhelmingly the distribution model. Unlike expectations, no beads were found among the several scraping stones at the front of the Okak house.

Roof and Floor Provenance. Remains of fires, as reported by consultants, may have been thrown out the smoke hole, coming to rest on the roof. Fire on the roof would not be a problem, because throughout the autumn, winter and spring the roof would have been covered with snow. As well, trash was disposed of in the same manner. Paraphernalia also may have been "parked" on the roof, although the walls were too low for roof storage to provide security from dogs or other animals. A house excavation on the middle Alatna River has yielded abundant faunal remains from the roof layer (Morlan 1967).

During excavation there was an almost constant attempt to interpret the structural remains as they were uncovered. It was determined early that there was a roof layer, consisting of silts and gravel overlaying birchbark and poles, although due to disruption during collapse, these components were in some places jumbled and/or inverted. It was not realized until after one house was excavated, however, that because of the way the houses were constructed the roof layer is essentially absent from the central area. Hearths and parts of the floor lay directly beneath recent organic litter, curled birchbark and displaced wood from the structure. Initially, several artifacts were thought to have come from the roof because they were found prior to penetrating any deposit which would have overlaid roof poles. Most of these items now are considered to have laid on the floor in areas lacking such deposits or to have been present in an interior context. For a few items a roof provenance is still possible.

Lake Creek. There is no evidence for any artifacts or faunal remains coming from the roof, but two beads were found among surface litter where there was squirrel activity.

Kayak. Most of the small amount of material thought to have come from the roof has been reconsidered. Some burned wood and one curved, adzed piece in badly disintegrated condition were found completely above the roof deposits. The brass trigger guard and a piece of antler appear to come from the roof matrix.

Okak. A modest number of faunal elements, about 10-12 pieces, were found on or in roof deposits. The two items noted next originally may have been in roof deposits that sloughed to the sides. Found above the partially collapsed walls, or slightly outside their limits, were a sidelock plate from a gun and a moose bone. Among the bones from the roof are elements of porcupine, hare, moose and unidentified large and medium size mammals.

"Rodent" Gnawed Bones

"Rodent" gnawing refers to chewing by a range of animals which leave distinctive grooved tooth patterns, although several of these, porcupines for example, are not rodents. The presence of such

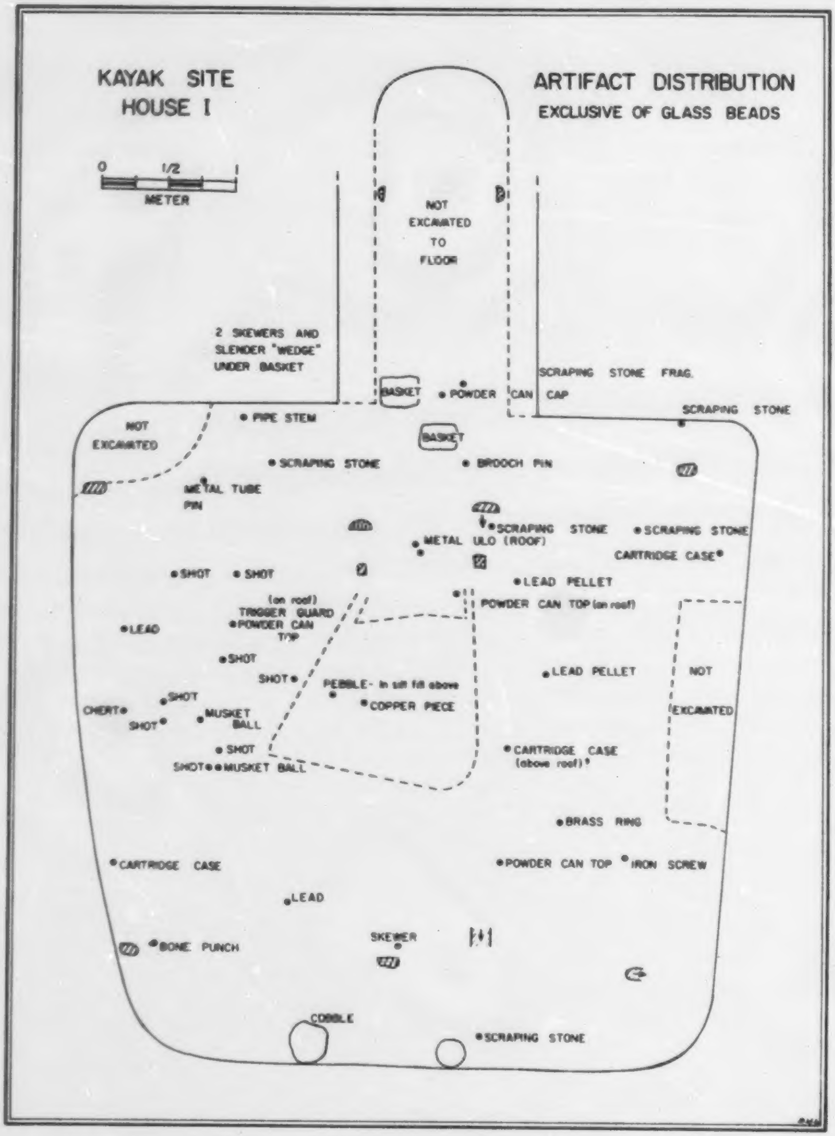
KAYAK SITE
HOUSE I
0
1/2
1
METER
ARTIFACT DISTRIBUTION
EXCLUSIVE OF GLASS BEADS
NOT
EXCAVATED
TO
FLOOR
2 SKEWERS AND
SLENDER "WEDGE"
UNDER BASKET
BASKET
POWDER CAN CAP
SCRAPING STONE FRAG.
SCRAPING STONE
NOT
EXCAVATED
PIPE STEM
BASKET
SCRAPING STONE
BROOCH PIN
METAL TUBE
PIN
SCRAPING STONE
SCRAPING STONE
METAL ULO (ROOF)
CARTRIDGE CASE
SHOT
SHOT
LEAD PELLET
(on roof)
TRIGGER GUARD
POWDER CAN
TOP
POWDER CAN TOP (on roof)
LEAD
SHOT
SHOT
PEBBLE- in silt fill above
COPPER PIECE
LEAD PELLET
NOT
EXCAVATED
SHOT
CHERT
SHOT
MUSKET
BALL
SHOT
SHOT
MUSKET BALL
CARTRIDGE CASE
(above roof)?
BRASS RING
CARTRIDGE CASE
POWDER CAN TOP
IRON SCREW
LEAD
SKEWER
BONE PUNCH
COBBLE
SCRAPING STONE

Fig. 5.9. Artifact distribution, Kayak House No. 1.

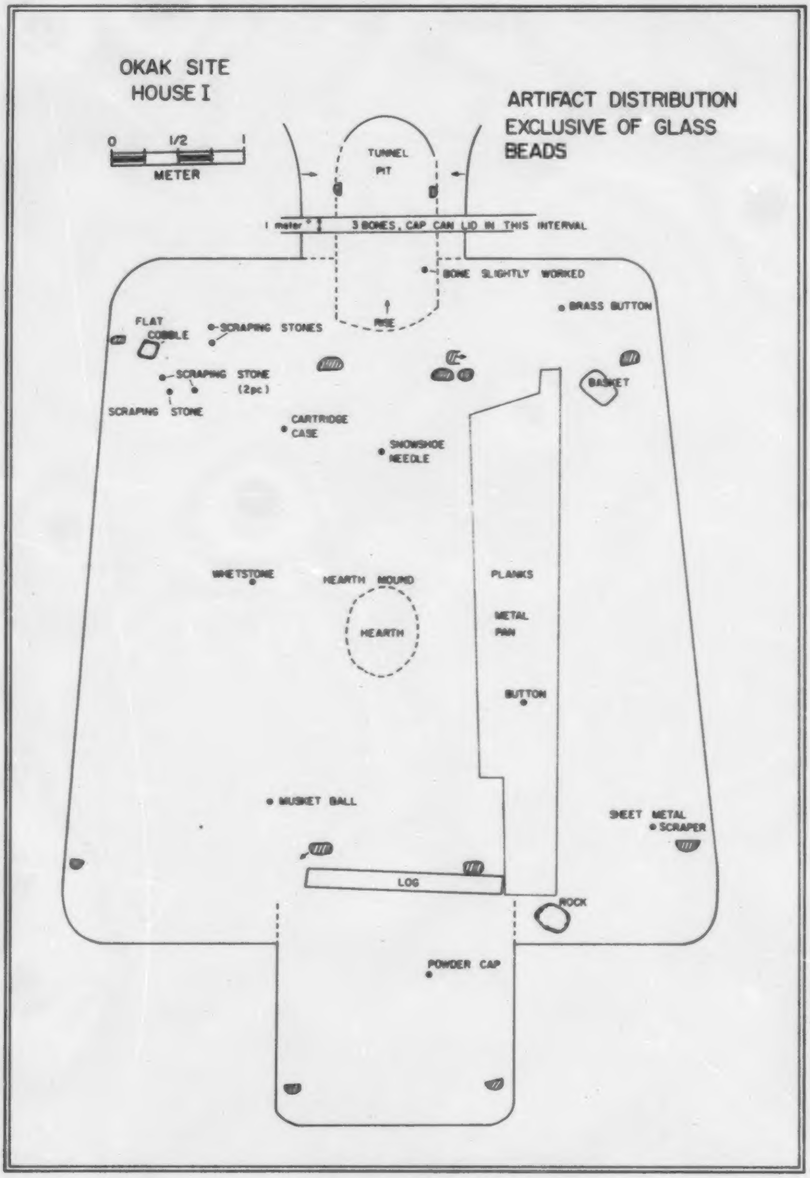
OKAK SITE
HOUSE I
ARTIFACT DISTRIBUTION EXCLUSIVE OF GLASS BEADS
0
1/2
1
METER
TUNNEL
PIT
1 meter
3 BONES, CAP CAN LID IN THIS INTERVAL
BONE SLIGHTLY WORKED
RISE
BRASS BUTTON
FLAT
COBBLE
SCRAPING STONES
SCRAPING STONE
(2pc)
SCRAPING STONE
BASKET
CARTRIDGE
CASE
SNOWSHOE
NEEDLE
WHETSTONE
HEARTH MOUND
HEARTH
PLANKS
METAL
PAN
BUTTON
MUSKET BALL
SHEET METAL
SCRAPER
LOG
ROCK
POWDER CAP

Fig. 5.10. Artifact distribution, Okak House No. 1.

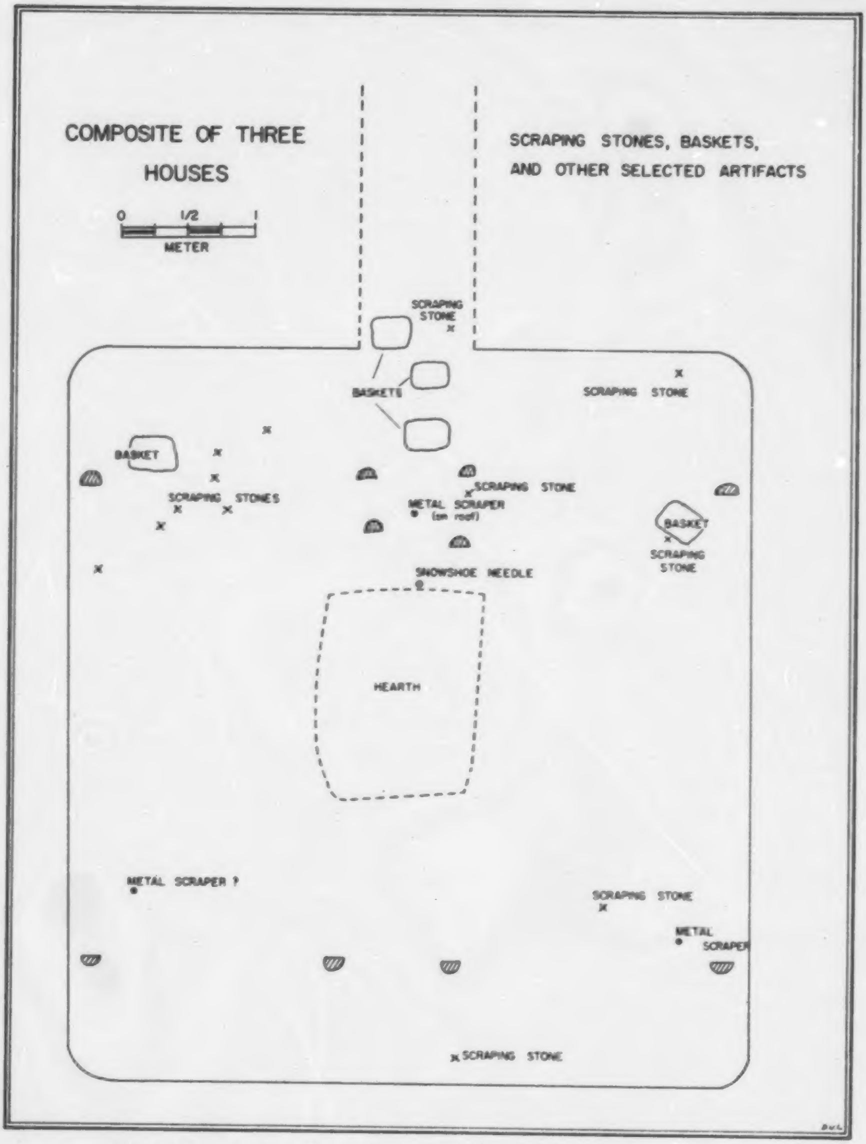
COMPOSITE OF THREE HOUSES
0
1/2
1
METER
SCRAPING STONES, BASKETS, AND OTHER SELECTED ARTIFACTS
SCRAPING STONE
BASKETS
SCRAPING STONE
BASKET
SCRAPING STONES
SCRAPING STONE
METAL SCRAPER (on roof)
BASKET
SCRAPING STONE
SNOWSHOE NEEDLE
HEARTH
METAL SCRAPER ?
SCRAPING STONE
METAL SCRAPER
SCRAPING STONE

Fig. 5.11. Composite plot of probable female oriented objects.

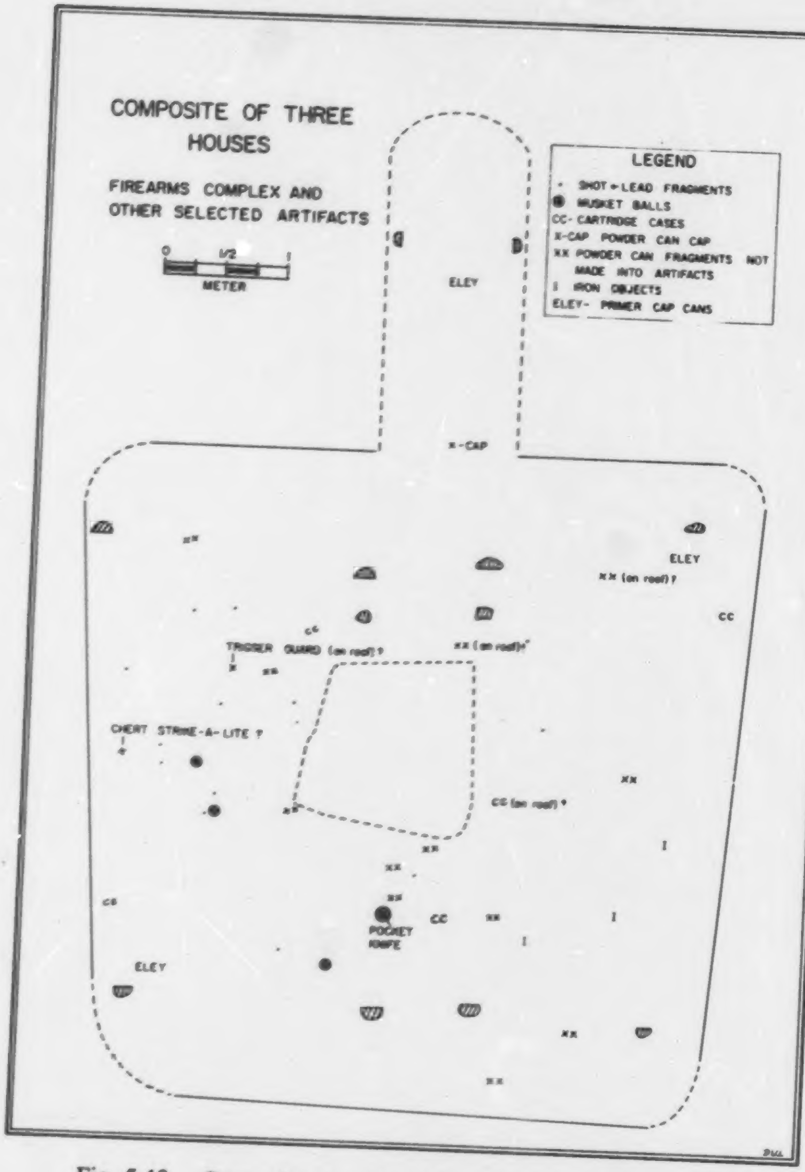
COMPOSITE OF THREE HOUSES
FIREARMS COMPLEX AND OTHER SELECTED ARTIFACTS
0
1/2
1
METER
LEGEND
· SHOT + LEAD FRAGMENTS
● MUSKET BALLS
CC- CARTRIDGE CASES
X-CAP POWDER CAN CAP
XX POWDER CAN FRAGMENTS NOT MADE INTO ARTIFACTS
I IRON OBJECTS
ELEY- PRIMER CAP CANS
ELEY
X-CAP
XX
ELEY
XX (on roof) ?
CC
CC
TRIGGER GUARD (on roof) ?
XX (on roof) ?
XX
CHERT STRIKE-A-LITE ?
XX
CC (on roof) ?
XX
I
XX
XX
XX
CC
POCKET KNIFE
CC
XX
I
I
ELEY
XX
XX

Fig. 5.12. Composite plot of probable male oriented objects.

bones may yield information on bone disposition and conditions of site abandonment (taphonomy). There are five chewed elements, two from the Okak site and three from Lake Creek. More than one species of unidentified mammal appears to be responsible for the chewing.

A heavily chewed moose ilium and a lightly chewed bear ulna came from the floor at Lake Creek. The latter, however, is from the central area where there may have been only a thin protective cover. At this site, there was extensive squirrel activity, especially visible in voids formed by the collapse of the walls and roof and by the curling of bark sheets. A chewed moose femur from Okak was recorded without any notation other than its two-dimensional provenance, which should indicate that it is from the floor; although rootlets that had penetrated the silt-filled medullary cavity suggest that it may have come from the silt layer at the top of the roof cover. The other specimen, a moose scapula, was found along the wall outside the house and may have come from an original roof provenance.

In summary, chewed bones come from the floor, roof, or outside wall crevices and superficial locations, or have equivocal provenance records. There is no evidence that porcupines or other animals entered the houses, but squirrels and hare would have had access to some superficial specimens and to those placed outside the house. Because of the small sample divided among several possible contexts, no significant conclusions can be made from the chewed bone collection.

Faunal Remains

Lake Creek. Faunal elements were scattered over all parts of the house floor, although there were more in the rear half than in the front half (Fig. 5.13). Elements of bear, the most common species, were found in all quadrants. No bones were found against the end walls and only a few charred fragments occurred in the hearth.

Kayak. Faunal remains at this house are too sparse to form a pattern. Elements of hare were found in all quadrants. There were only a few small fragments of bone in the hearth.

Okak. Two sets of fitted elements tie the cache pit to house No. 1, which would be expected on the basis of proximity. Other fits involve pieces found within the cache pit, in the tunnel, and between the tunnel and various parts of the house as shown in Figure 5.14. All bones that were fitted together are either moose or probably are moose. Faunal remains are distributed all over the floor, although few were found close to the front and back walls. Moose is found in all contexts and all parts of the house. Hare has a spotty and uneven distribution. A number of hare mandibles and a skull were found in the middle area of the right side. Bear was found primarily in the middle area of both sides, but the sample is small -- 5 elements were plotted on the floor plan and a 6th was in the cache pit. Except for the fox skull, no small mammal bones were found within the tunnel or its depressed extension into the house.

Feces

Feces, presumed to be dogs,' are found mainly in the tunnels of the excavated houses, except at Lake Creek where the tunnel was not excavated. They also occur in the main room of Okak House No. 2 where only a very small part of the floor was tested. Implicitly, dogs were kept in the tunnel entries, an assumption that was clarified by oral tradition collected from local consultants. If they were also kept in the main room, they apparently either were house broken or their owners "scooped" after them and threw the results into the tunnel, Okak House No. 2 excepted. Pet dogs, however, were only infrequently kept inside dwellings. When they were, it was almost always by old people or those who were childless.

Dog-Chewed Bones

No complete distributional analysis has been made for dog-chewed bones, although their general distribution was noted previously by species.

Lake Creek. Chewing is present on some of the large mammal and moose fragments and, to a minor extent, on bear bones.

Kayak. Few large faunal elements were recovered from this house, but the single moose innominate shows chewing.

Okak. Bear bones from the main room and cache pit are chewed, but the greatest degree of chewing is on moose bones and unidentified fragments. Chewed specimens are found throughout the site on all sectors of the floor area. Their presence in the cache pit substantiates identification of the bones there as a secondary deposition.

Dog-chewed large mammal bones are found in all houses. In addition, small mammal and fish bones appear to have been completely ingested. The greatest amount of evidence for chewing is present on moose bones but, contrary to norms, the ritual animal, bear, did not escape the attention of dogs. Dogs appear to have had access to all parts of the house. General access may have occurred when the human occupants were away, although at other times dogs may have been kept in the entries.

Summary and Discussion

The focus of this chapter has been on the identification, description and spatial relationships of the artifacts and faunal remains excavated from the middle Koyukuk River sites. In the artifact category, it is especially interesting to note that quantitatively the Euro-American imports far outnumbered those of indigenous manufacture. At Lake Creek 163 imported objects and 25 indigenous ones were recovered, but of the imports 131 were beads. Similarly, at the Kayak site imports also outnumbered the traditional objects. There, 1209 imported objects, 1169 of which were beads, and

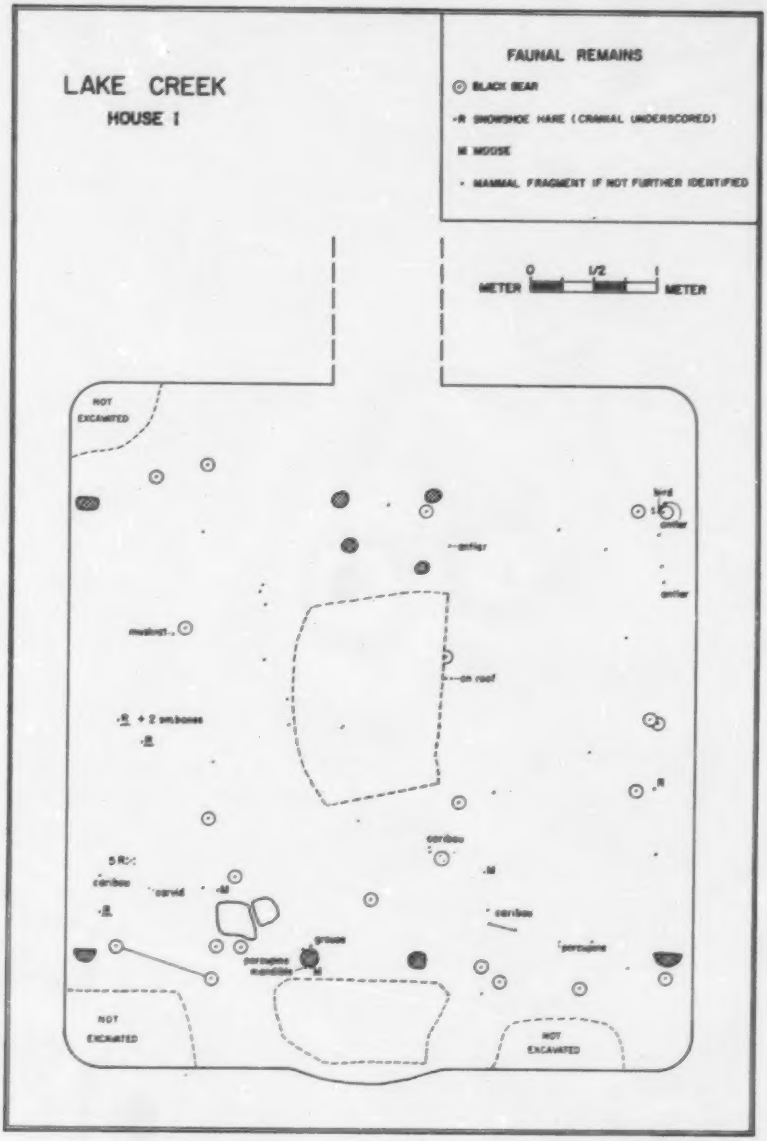
LAKE CREEK
HOUSE I
FAUNAL REMAINS
⊙ BLACK BEAR
•R SNOWSHOE HARE (CRANIAL UNDERSCORED)
M MOOSE
• MAMMAL FRAGMENT IF NOT FURTHER IDENTIFIED
0
1/2
1
METER
METER
NOT
EXCAVATED
bird
antler
antler
antler
muskrat
on roof
R + 2 sm bones
R
R
caribou
5 R
caribou
cervid
M
caribou
M
caribou
grouse
porcupine
mandible
M
porcupine
NOT
EXCAVATED
NOT
EXCAVATED

Fig. 5.13. Distribution of faunal remains, Lake Creek House No. 1.

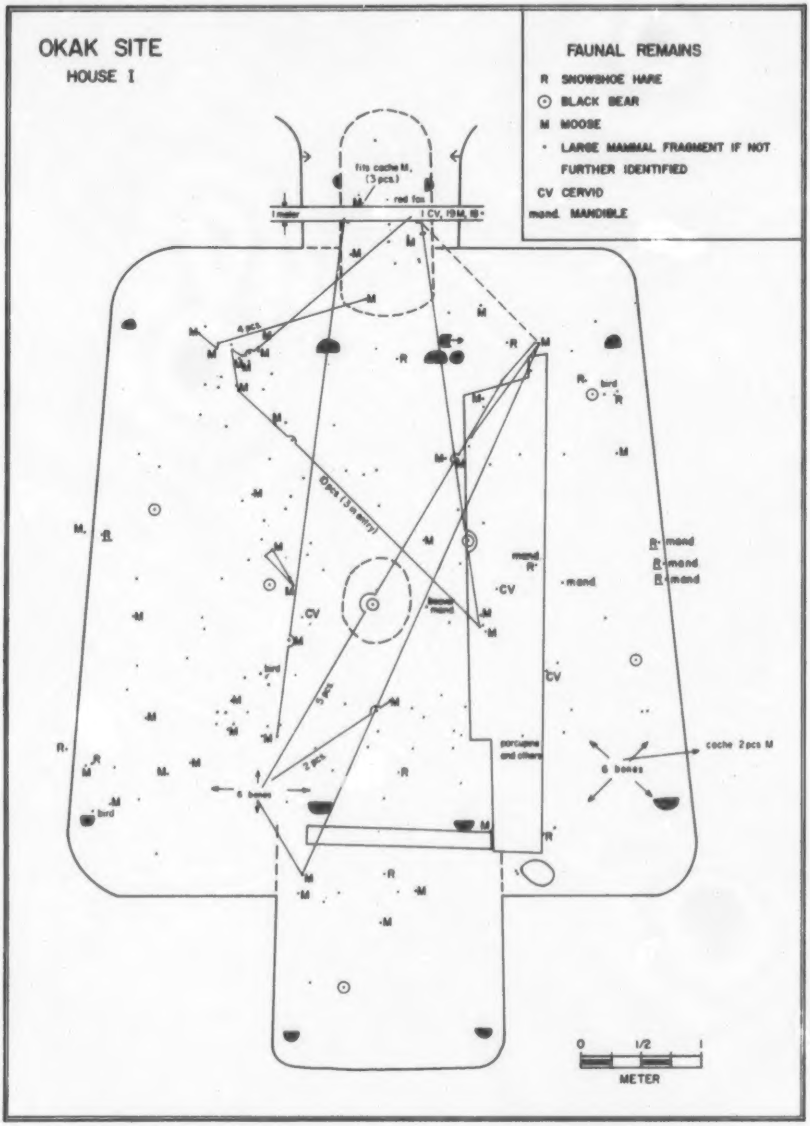
OKAK SITE
HOUSE I
FAUNAL REMAINS
R SNOWSHOE HARE
⊙ BLACK BEAR
M MOOSE
• LARGE MAMMAL FRAGMENT IF NOT FURTHER IDENTIFIED
CV CERVID
mand. MANDIBLE
fits cache M, (3 pcs.)
red fox
1 meter
1 CV, 19M, 18•
4 pcs.
10 pcs (3 in entry)
3 pcs
2 pcs
6 bones
bird
mand
CV
porcupine and others
cache 2 pcs M
0 1/2 1
METER

Fig. 5.14. Distribution of faunal remains, Okak House No. 1.

33 indigenous ones were recovered. The disparity between local and imported objects at Okak followed the same pattern observed at the other two sites, with 431 trade items, of which 418 were beads, and 11 indigenous items recovered. From the test excavation at Okak House 2, two additional Native-made items also were recovered.

A perusal of the faunal refuse data presented in Table 5.5 shows major differences in the types and quantities of faunal remains from the several houses. These may be attributable to variations in the diets and housekeeping practices of their respective residents and may further reflect both seasonality and abundance of game during the period(s) of occupation in the latter part of the 19th century.

Following identification, description and quantification, the locations of the objects and faunal remains recovered from the houses were plotted on their respective floor plans in an attempt to better understand human interactions and activities within individual houses and variations between them, and, in turn, to compare these results with oral tradition. My stylized space utilization plan based on oral traditions collected from Koyukuk River elders (Fig. 5.4) was used as the standard for interpreting the plots of the material excavated.

Bead distributions illustrated in Figures 5.5 - 5.7 represent both dropped lots and general scatter. In two houses (Fig. 5.3 and 5.6) most of the beads are found in the front half, whereas, excepting those found in the tunnel, beads at Okak house 1 (Fig. 5.7) do not fit this pattern.

Composite distributions of artifacts, exclusive of beads, from the three houses (Fig. 5.8 - 5.10) show distinct patterning, although for most categories they are not highly definitive, and only partially corroborate the utilization of space described by elder consultants (Fig. 5.4). However, the composite plots of male vs female objects illustrated in Figures 5.11 and 5.12 show a reasonably good fit with the stylized plan in Figure 5.4.

Except for minor local clusters, the pattern seen in the distribution of faunal remains is one of dispersal. Fitted fragments show that the distribution of bones, apparently broken for the marrow or grease content, is disordered, although one can expect that initially these would have been in proximity at the work station where they were broken and the marrow extracted.

Distribution of bear bones, however, is of especial significance in evaluating space utilization by sex. Under ideal conditions, no bear bones would be expected to be found in Athapaskan dwellings with women in residence, especially those who had not as yet reached menopause, but bear bones were found in each of these three houses. Hide scrapers also were found in each of the dwellings, thus suggesting that adult women probably were in residence when bear was eaten. But if one carefully evaluates the plots of faunal remains, it is evident even from this very small sample that most of the bear bones were located in areas that were purported to have been used by men or old people. If the period of habitation reflected by the faunal remains recovered was one of deprivation, it might not be unusual to find bear bones in certain locations in these houses.

The single lynx scapula from Okak recovered from the "women's" area of the site is significant, if indeed this is actually where it was discarded after eating. Lynx has powerful ceremonial significance; and, according to Athapaskan oral tradition, in early times it was never taken into a house when women were present.

In an ethnoarchaeologic study such as this where major gaps in oral tradition preclude using it as a "cookbook" guide to understanding and interpreting traditional housekeeping practices, it is difficult to evaluate with a high degree of confidence the relevance of the distribution of artifacts and faunal remains on living floors. Gaps in the information, such as (a) were the floors completely covered with spruce boughs first and then covered with skins; (b) did the boughs take the place of flooring and individual skins only were placed over them when they were required to sit or sleep on; (c) if (b) is the case, were the skins rolled up and placed out of the way after use? Answers to simplistic questions such as these would go far toward providing us with a more firm basis for evaluating space utilization from archaeologic remains, because we would then have a better understanding of how the distributions initially were made. Despite the lack of this type of information from oral tradition, it seems realistic to suggest that one may place more confidence in using artifact locations as indicators of space utilization than in using those for fauna. Objects that would be used again and exotic imports may have been carefully picked up and put away for safe keeping before skins were moved for cleaning or temporary storage. Less attention probably was given to bone fragments that were left over following a meal or from processing for grease extraction, and they may far more readily have fallen to the floor and been left there. Oral tradition as well as my own observations of contemporary practices during the 1960s and early 1970s confirm this assumption.

CHAPTER 6
COMPARATIVE ANALYSIS OF HOUSES, CONTENTS AND NATURAL ENVIRONMENTS

Turning from the identification, analysis and spatial relationships of the objects excavated from the Koyukuk houses discussed in Chapter 5, in this chapter the focus is on comparison of Koyukuk data with similar information from other areas in Alaska and the Yukon. The sample universe includes sites from the Yukon River Koyukon (Tena: de Laguna 1947); Ingalik; Gwitch'in; Han; Tanana; Tukuto Lake, Type 2; Late, Middle and Early Kobuk River; Atna and Nushagak River. Results from these comparisons serve as a useful foil for evaluating and interpreting the Koyukuk River sites and placing Koyukuk events in a broader regional context.

Comparisons of styles and methods of house construction in contextual studies such as this provide the basis for delineating local or regional variations and assessing possible ancestral roots of the Koyukuk River semisubterranean house type. To understand the relationship of the Koyukuk houses to those from others regions of Alaska and the Yukon, to test whether or not there are differences in both quantities and types of Euro-American trade goods and indigenous artifacts in sites of varying distances from initial points of contact, and to assess the impact of different natural environments on house construction and contents, the Koyukuk variant is used as the referent against which the comparisons are made.

Comparative Study of Semisubterranean Houses

Distribution of Semisubterranean Houses

In the far northwestern region of northern North America, semisubterranean houses were constructed by both Yupik and Inupik speaking Eskimos and the Athapaskans, but among the Athapaskans they were largely limited to the groups which border the Eskimo[1] of western and south-central Alaska and evidently also the northern Yukon and northwestern District of Mackenzie. At the time of historic contact these were the Koyukon, Ingalik, Upper Kuskokwim or Kolchan, Tanaina, Atna some Upper Tanana who may have been influenced by their Atna neighbors and the Gwitch'in. Semisubterranean winter housing is poorly documented for the several Gwitchin bands, but according to Osgood (1936, 1971) the eastern Gwitch'in and the Han built houses with slightly depressed floors; and there also is spotty archaeological documentation of their dwellings. D. Clark (1995) reports historic rectangular semisubterranean Han houses from one site along the upper Yukon but their construction may have been instigated by traders.

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[1] The term "Eskimo" is used in this paper to refer jointly to historic Inupiat (western Inuit), Yuit and Yupik and to their antecedents when it appears unwise to assign a more specific ethnic label to archaeological assemblages.

House Types, Attributes and Definitions

Winter or permanent houses in the greater study area share many structural or architectural elements in common. These have been variously combined so that above the level of attributes delineation of particular house types or the setting of boundaries between type distributions becomes subjective. All house forms under consideration appear to be related through the linkage of shared attributes. In defining house types the following criteria are considered:

1. Size of the house and social organization of occupants;
2. Adaptations to climate, weather and to season occupied;
3. Structural principles used in construction;
4. Materials used in construction;
5. Features secondary to the main structure;
6. Variations and idiosyncratic behaviour.

Size and social structure. Without radically changing construction principles or design, structures may range from single- or dual-family dwellings to ones that house large segments of a kin group, for example Tsimshian on the Northwest Coast. Historically, the same design attributes may be involved, but structures may be profoundly different in their cultural and societal contexts.

Adaptations. By changing specifications and sheathing, basically similar structural frameworks may be used for light summer surface huts, for more tightly built permanent surface houses, and for heavily banked semisubterranean houses adapted for cold season use in harsh climates. And, as construction becomes more labor intensive, greater care in construction, possibly with an eye toward use for several years, may be expected. Tunnels, including the specialized cold trap form, and storm sheds are examples of particular adaptations to climate and season.

Structural principles. Permanent cold season construction may be dichotomized between two modes: one in which a post and beam framework is erected and upon which wall, roof members and sheathing are laid; the other in which walls are built as units that support the roof, for example as seen in trappers' cabins. The two forms can intergrade or features of both may be employed, providing the option for various roof types.

Secondary features. Sleeping benches are reported for the Koyukon and the northwestern Alaskan Inupiat. External, appended sleeping rooms and sweat baths are features of Tanaina, Atna, Pacific Eskimo and certain other houses; and cooking alcoves are located off the tunnels of some coastal Eskimo houses. These features, although important, are secondary to the basic architectural and structural principles.

Variation. Temporally and spatially, localized variation is relatively slight in late Kobuk and Koyukuk River sites. On the lower Yukon and southward, as well as in earlier time periods, there appears to be greater heterogeneity. These variations may indicate both individual and cultural options, and suggest that certain house forms and features should not be forced into artificial, rigidly stylized structural typologies.

Definitions. A review of the stylistic variations and the data presented in Table 6.1 suggests that it is more practicable to identify houses, particularly cold season dwellings, according to the place and time of their occurrence and to eschew typological labels than to force them into artificial categories. Nevertheless, it is important to recognize clearly defined attributes. Definitions for those used in the comparisons in Table 6.1 are outlined in the following and illustrated in Figure 6.1:

1. Cribbed roof: a roof formed by timbers laid crosswise in layers. Variations occur and details of support by posts and walls differ. This type of roof tends to become either a truncated pyramid or, when covered with turf, mound-shaped.
2. Four center-post construction: a truncated pyramidal form of superstructure supported by four center posts. Often, however, dual ridge-pole construction has been referred to as "four-post center construction" (Giddings 1952).
3. Twin or dual ridge-pole construction: the use of two centrally located horizontal ridge poles as shown schematically in Figure 6.1. In some houses the front and back walls of the house may slope inward, as seen in the Koyukuk River floor plans. When this occurs the front and back center posts are located inward from the wall. This may be viewed as a tendency toward or a variation of four center-post construction. Some Inupiat houses are more or less intermediate (Giddings 1952:Fig. 6).
4. Roof/wall purlin: a horizontal pole, extending across the top of the front and rear corner posts, that acts as a retainer for the vertical wall liners and as a secondary support for the roof poles. The purlin/wall support is described in Chapter 4 and illustrated by the bottom feature in the right-hand column of Figure 6.1 by diagonal lines drawn across the top of the vertical post shown inside the wall. Comparative analysis shows that this attribute may be important in tracing architectural development and relationships through both time and space.
5. Platform: a slightly raised functionally demarcated floor area at the sides and in back of the hearth. In some houses, especially larger ones and in men's houses, there is a built-up bench with usable space underneath. Often it is formed by gravel fill retained by small logs. It is here that people work, sit and sleep.

Attribute Analysis and Comparisons

Results from comparisons of permanent or cold season houses used by a number of historic, protohistoric and prehistoric Athapaskan and Eskimo groups, exclusive of the highly variant and specialized coastal Eskimo houses, are shown in Table 6.1. The referent for the model used is a stylized middle Koyukuk River house developed by averaging each of the individual local house attributes cited. Within almost all areas observed, one expects to find minor variations in size, style

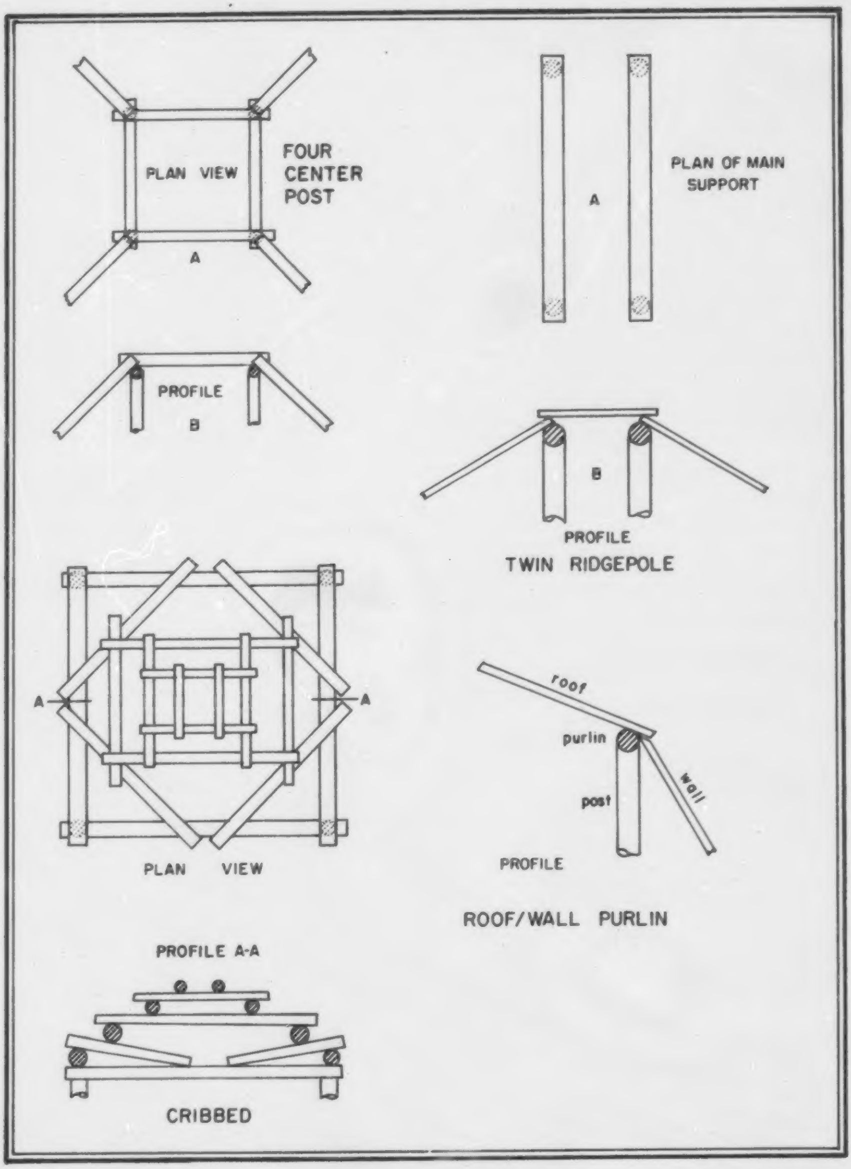
PLAN VIEW
FOUR CENTER POST
A
PROFILE
B
A
PLAN OF MAIN SUPPORT
B
PROFILE
TWIN RIDGEPOLE
A
A
PLAN VIEW
roof
purlin
post
wall
PROFILE
ROOF/WALL PURLIN
PROFILE A-A
CRIBBED

Fig. 6.1. Illustration of construction terms. Left column features show attributes of houses from western Alaska; and right column features illustrate Kobuk Inupiat and Koyukuk River Athapaskan attributes.

TABLE 6.1. ATTRIBUTE ANALYSIS OF SELECTED HISTORIC AND PREHISTORIC HOUSES*

Attribute	Koyukuk	Yukon R. Tena	Ingalik	Kutchin	Tanaina	Tukuto Lake	Late Kobuk	Middle Kobuk	Early Kobuk	Crow Village	Atna	Nushagak R.	Comments
Composite/Complex plan	-	-	-	-	+-	-	-	-	-+	-	-	-	Mainly coastal Eskimo.
Rear alcove, room or trenchlike projection	-+	-+	-	-	+	-?	-	+	+	-	+	-	Trenchlike projection at Ahteut.
Roof													
Bark roofing	+	+	-		+	-	-	-	+	+	+	+-	Kobuk absence is noteworthy.
Roof cribbed or truncated pyramid	-	?	+	-	-	-	-	-		+?-	+	-	
Corners only cribbed	-		-	-			-	-?		-+		-+	
Superstructure													
Corner posts support roof/wall purlins	+	+		+	+?	+?	+			NA	-?	NA	May distinguish early from late.
Single ridgepole	-		-	+	-	-	-	-		-	-	-	
Dual ridgepole, 4-post medial construction	+	+	+	-	+	+	+	+	+-?	-+	+	-	
Central post spacing = width of passage	+		+	NA	+	+	+-	+-	+NA	-	+	-	Diagnostic Nushagak/Kuskokwim.
Post spacing exceeds entry passage width	-		-	NA		-	-+	-+		+	-	+	
Main Room Details													
Vertical wall poles	+	+	-	+-	+?	+	+	+		-+	-	-	Horizontal wall logs characterize some SW Alaska houses esp. Nushagak/Kuskokwim.
Horizontal walls	-		-	-	-+		-?	-		+-	-+	+	
Mixed vertical/horizontal wall poles	-		-	-			-?	-		-+	+		
No wall poles (mats)	-	-	+	-	-		-	-		-	-	-	Peculiar, verify.
Benches with space underneath	-	-	+	-	+	-	-	-	-?	-	+	-	Log retainer separates Kobuk from benchless Koyukuk River.
Slight earthen bench	-	+-	-	-	-	+	+	+	-+	+	-	+-	
No bench	+	+-	-	+	-	-	-+	-+	+-	-	-	+-	
Central hearth	+	+	+	+	+	+	+	+	+-	+	+	+	
Hearth raised on mound	+	+-	+-	+	+	+	+	-	-	-	-	-+	Variably expressed.
Large rocks (heat retainers) present	+-	-	-		+?	+	-?	-+	+-	-	+	-+	In some areas from sweatbath.
House front corners greatly rounded	-	-	-		-	+	-+	-+	-	-	-	-	Late Kobuk varies by site.

Attribute	Koyukuk	Yukon R. Tena	Ingalik	Kutchin	Tanaina	Tukuto Lake	Late Kobuk	Middle Kobuk	Early Kobuk	Crow Village	Atna	Nushagak R.	Comments
Main Room Pit													
60mm deep or greater	+	+-	+	-	+	+	+	+	+	+	+-	+	
30-60mm deep	-	-+	-	+-	-	-	-	-	-	-	-+	+-	
Less than 30mm deep	-	-	-	+-	-	-	-	-	-	-	-+	-	Or no pit.
Entry													
Lacks passage	-	-	-	+	-	-	-	-	-	-+	-	-	
Passage at floor level	-?		+	NA	+	-	-+	-	-	-+	+-	-	
Passage slightly below floor level	+		-	NA	-+	-+	+	-+	-	-+	+-	+	Tanaina deep at Pedro Bay only?
Passage deeply below floor level	-?			NA	+-	+-	-	+-	+	-+	-	+-	
Wall lining vertical	+		-	NA	+		+	-		-+		-+	
Wall lining horizontal	-		-	NA	-			+	+	+-		+-	Ingalik unlined.
Porch at outer end of passage	-?	+-	+	NA	-?	+	-	-?	-?	+-		+-	
Passage is longer than house	-	-+	-	NA	-	-	-	+	+	-	-		
Intergroup summary	Koyukuk is the key form with which others are compared.	Information incomplete; use of pyramidal roof needs verification.	Cribbed roof also known. Osgood's description differs from Koyukuk mode of roof and wall construction.	Single ridge pole and shallow or no pit distinguish from Koyukuk.	Sometimes distinguished by large size & appended rooms.	Corners rounded; details lost due to reuse of timbers; tunnel deep.	Somewhat like Koyukuk but lacks birchbark cover & has low benches & rounded front corners.	Somewhat like late Kobuk-Koyukuk but lacks wall retainer/roof purlin & has hor. walls.	Deep pit, & deep tunnel relate to coast unlike Koyukuk Koyukon.	Wall & roof differ from Kobuk & Koy. Rel. to Nushagak but variant.	Attached rear room aligns with Tanaina as does wall constr. Unlike Koyukuk Koyukon.	Generally different type than Kobuk-Koyukuk house.	

* Sources for information are as follow. Koyukuk Koyukon: contact period sites analyzed in the present report. Tena: Yukon River Koyukon certain Ingalik, including those later distinguished as Holikachuk, as described by de Laguna, largely contact period archaeological. Ingalik: as reported ethnographically by Osgood. Gwitch'in: as reported ethnographically by Osgood, especially easterly groups. Tanaina: described by Osgood and various other sources, largely ethnographic. Tukuto Lake: Type 2, which is typical, about 1600 A.D Eskimo. Late Kobuk River: Kayak and Ambler Island sites, about A.D. 1730-1850. Middle Kobuk River: Ekseavik and Ivasahpat sites, about A.D. 1400. Early Kobuk River: Ahteut, about A.D. 1250. Crow Village: located off lower Kuskokwim River in area most proximal to Yukon River, contact period and historic Yupik. Atna: early contact period sites located in the Copper River basin. Nushagak River: 19th century Akulivikchuk and Tikchik Yupik Eskimo sites

or design. Entries in Table 6.1 such as the symbol "+-" should be interpreted as meaning "usually, but not always present." Similarly, NA means that the question is not applicable, e.g., in the case of tunnel details for a house lacking a tunnel entrance. When a dichotomy is stated or implied, a single entry usually means that the reverse holds for the inverse situation. Notes following the table highlight especially significant data.

Koyukuk and Kobuk River Houses. The Koyukuk River dual or twin ridge-pole form consists of a framework against which wall and roof components are laid. It employs the roof purlin/wall support method of construction and is notable for its low height as described in Chapter 4. The late Kobuk River Inupiat houses (Fig. 6.2) are almost identical to those on the Koyukuk with the following exceptions: they lack bark covers, have built-up benches with log retainers, a few have somewhat wider spacing between the center posts, and at one site the front corners are rounded (Giddings 1952; Hickey 1976).

Other Indian Houses. The Tena, as delineated by de Laguna (1947), are largely Koyukon from the Yukon River, although they also include some Ingalik and the intermediate Holikachuk. Published data on design and construction of Yukon River Tena houses is ambiguous. One house ruin investigated by de Laguna (1947:Fig. 8) at Blackburn appears to be of the Koyukuk River twin ridge-pole, purlin/wall support form, but her interpretation of Jette's schematic drawings and other data lead her to believe that some of their Yukon River houses had pyramidal roofs. However, she considers houses found from Blackburn up to Nulato to be based on Norton Sound Eskimo models, and those below Blackburn, largely in Ingalik territory, to be based on southwestern Eskimo models.

Roof and wall construction of Ingalik houses, as described by Osgood (1940), is radically different from that of Yukon Koyukon (Tena) and Koyukuk River Koyukon houses. Osgood reported that Ingalik houses lack actual wall construction. Instead, the pit is lined with mats and the lower edge of the roof rests on the ground outside the pit, leaving a shelf around the perimeter. De Laguna's surveys failed to verify the existence of this house type. According to Osgood, the Ingalik also built a few dwellings with cribbed roofs modeled after their *kashims* or men's club houses.

Semisubterranean house remains from the Tanaina area lack good organic preservation (Holmes 1988; Townsend and Townsend 1961), but Osgood (1937) obtained some construction details from oral tradition. Structurally, Tanaina houses may have been similar to those on the Koyukuk River, but in some cases they were notably larger, had internal compartments, and also had special rooms attached to the family quarters for sweat bathing. Both Koyukuk and Tanaina houses had twin ridge-poles, although there is some question as to whether or not the Tanaina used the purlin/wall support type of construction. De Laguna (1934) illustrates the use of purlins in post contact Tanaina houses but they may not necessarily be indigenous there, especially inasmuch as similarly constructed small shelters were built by Russianized natives on Kodiak Island. According to D. Clark (personal communication), the Russian influenced structures differ radically from the traditional multi-family Koniag house on Kodiak. At Kachemak Bay another form of Tanaina house employed horizontal log construction. It may lack an Eskimo model on the Pacific and may be either a traditional Tanaina-Atna type or derived from the Bering Sea Yupik of the Nushagak River region.

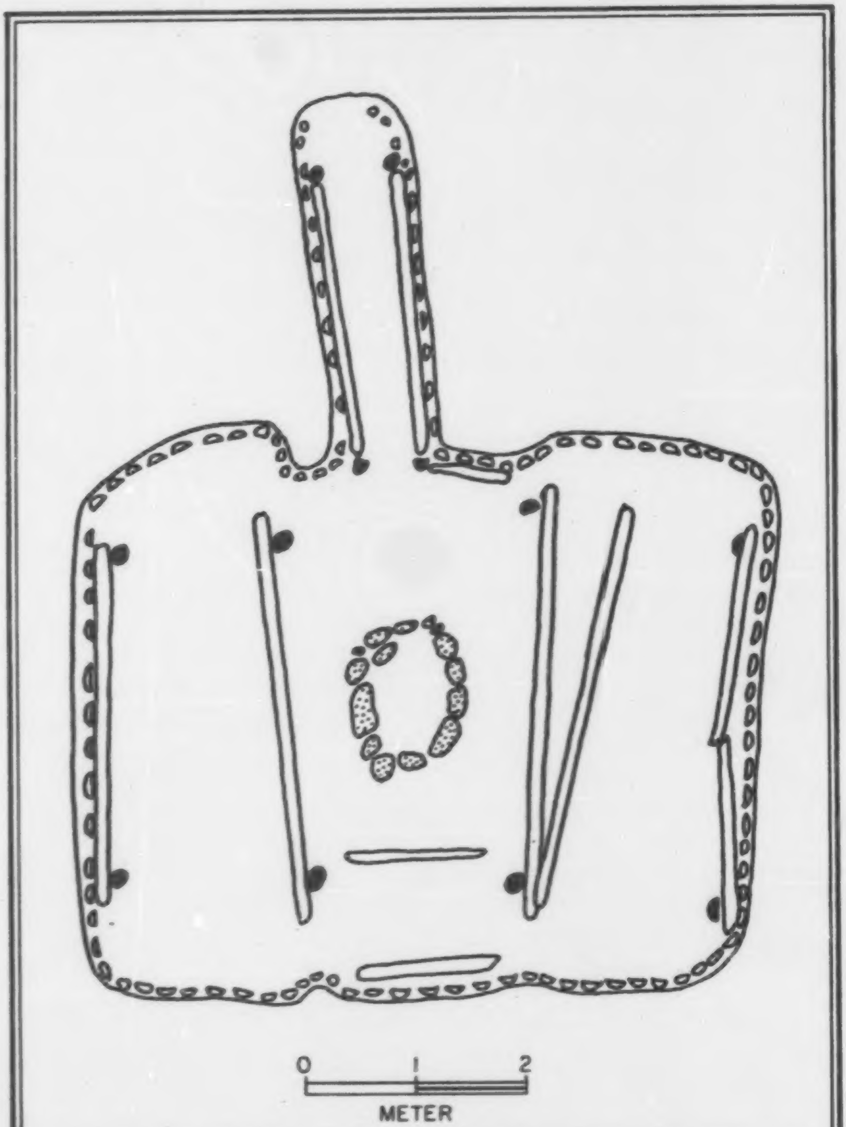

Fig. 6.2. Floor plan and basal structural elements of a late prehistoric Kobuk River house (from Hickey 1976: Fig. 6).

Structural information for Atna houses is incomplete, but in many respects they appear to have been similar to those of the Kachemak Bay-outer Tanaina, instead of being like those of the Atna-upper Tanaina (Susitna River) as would be expected. Dual ridge-poles were used but wall construction was different from that of the Koyukuk River houses; and customarily there were large sweat bath-sleeping compartments appended to the rear of the houses (Shinkwin 1974).

As described ethnographically, Kutchin houses have several elements in common with those on the Koyukuk, including purlin/wall support construction, but they differ radically by having only a single ridge-pole. Compared with the groups discussed above, Gwitch'in winter dwellings apparently were not true semisubterranean structures, although their floors were excavated to a depth of about 46mm below the surface (Osgood 1936). Elsewhere I have referred to this type as depressed floor construction. According to Osgood (1936), Gwitch'in houses lacked tunnels, storm sheds and entry passages. His description of the permanent cold-season Han house is identical to that for the Gwitch'in (Osgood 1971), and varies radically from the enigmatic deeply depressed-floor house pits with entry passages excavated at Fort Reliance by D. Clark (1985; 1995). Furthermore, use of Osgood's ambiguous term "moss house" to describe a variety of Athapaskan (Dene) and Inupiat/Inuit houses is likely to create confusion. At issue is what is under the moss. Possibly the house depressions reported archaeologically from Gwitch'in territory (see below) were for dwellings of the type described by Osgood.

Eskimo Houses. Inupiat and Yupik houses, exclusive of traditional ones from the Kobuk River discussed in conjunction with those from the Koyukuk, include Tukuto Lake, Type 2; Early and Middle period Kobuk River houses; Crow Village, and Nushagak. Information on Tukuto Lake, Type 2, semisubterranean house construction is unclear because of later reuse of timbers from the site. This house is marked by deep tunnels and greater than usual built-up bench height (Hall 1976). Construction appears to be of the twin ridge pole form, possibly with purlin/wall supports, and thus is related to the Kobuk and Koyukuk models. Middle second millennium Kobuk River houses at Ivasahpat and Ekseavik, dating from about A.D. 1400, may be ancestral to later Kobuk houses. However, details of roof and wall construction differ, most notably because of the absence of the roof purlin/wall retainer. At the early second millennium Kobuk River Ahteut site, dating to about A.D. 1250, preservation is not sufficiently good to provide details needed for comparison. Houses there differ from later ones in the same area, especially in their greater floor and tunnel depth and the presence of unique tunnel-like extensions at the rear of the houses. Crow Village and Nushagak River houses show marked departures from late Kobuk and Koyukuk River houses in the construction of walls and roofs, as illustrated in Table 6.1.

Conclusions

On the basis of information extant at present, traditional protocontact Koyukuk River houses share many design attributes in common with late-prehistoric Kobuk houses. No earlier houses on the Koyukuk are reported, except the 5-6th century AD Ipiutak-related ones at Hahanudan Lake for which direct continuity with later protocontact houses has not been demonstrated. Therefore it is hypothesized that either: (a) Koyukuk Athapaskan houses were derived from Kobuk River Inupiat houses about 200 years ago, or (b) Koyukuk and Kobuk houses are convergent or parallel developments from a commonly shared antecedent that existed in both areas. Final decision on local origin must be held in abeyance until additional information on prehistoric Koyukuk River houses becomes available.

It may be significant that late Kobuk houses differ from earlier (A.D. 1400) ones in the same area (Giddings 1952;32-34), thus the derivation of the former from the latter remains to be demonstrated. There is an obvious relationship between Koyukuk and Kobuk houses, but other Athapaskan houses should not be ignored. A few decades ago it was possible to interpret all Athapaskan houses in Alaska as being late derivatives from structurally similar Eskimo houses (cf Giddings 1952). Now, at least in Atna territory and elsewhere, especially at Minchumina Lake, semisubterranean houses have been found with an antiquity of at least 600 years and possibly several centuries more (Holmes 1966; West 1978; Workman 1977). Circular, oval and rectangular features with depressed floors found in the northern Yukon at the Old Chief site, the lower Mackenzie valley at Whirl Lake, and the Anderson Plain region of the northern District of Mackenzie date from European contact back to as early as 100 A.D. (Cinq-Mars 1974, Gordon and Savage 1974, Pilon 1991) but none of these structures appears to be similar to the Koyukuk houses and many of them may be caches. Semisubterranean housing also may well be an old element in Koyukon culture. If this supposition is correct, I postulate that semisubterranean housing in interior Alaska and the Yukon is old and represents a northwestern North American variant of an ancient circumpolar tradition. The recent similarity of Koyukuk and Kobuk houses then would not necessarily be the result of borrowing a whole trait complex, but could be the result of information exchange stemming from the close relationship that existed between Kobuk and Koyukuk residents (McFadyen Clark and D. Clark 1976).

One element with a erratic distribution deserves comment. This is bark roofing, usually birchbark. Bark roofing is reported for all Athapaskan houses, except the Gwitch'in/Han for whom only limited information is available from archaeological contexts (Cinq-Mars 1974, D. Clark 1995, Pilon 1991). It also is present on the Crow Village and Nushagak River Eskimo houses; but, contrary to expectations, it is not reported for any of the well-known Kobuk River house sites. In view of Allen's report that he saw Kobuk River Inupiat living in a spruce-bark house on the Koyukuk near the Hogatza River in 1885, it is possible that Giddings and associates may have misinterpreted the use of birchbark in the Kobuk sites, an error also initially made by Larsen in his interpretation of the use of birchbark at Deering. His first impression was that both pieces of sewn birchbark and bark rolls attached to sticks excavated from this early Ipiutak-Norton related Site (*c* A.D. 200) were broken baskets and raw materials for making new ones. Later, after carefully analyzing the birchbark, Larsen came to the conclusion that Deering Site houses had birchbark roofs (Larsen: personal communication to McFadyen Clark 1978). This complex distribution then does not permit an easy solution to the question of attribute roots. It, however, does suggest that the Koyukuk River houses share certain attributes in common with other Athapaskan houses, and that the Koyukuk type of construction may not necessarily represent one of direct copying from the Inupiat on the Kobuk.

Comparative Analysis of Imported and Indigenous Artifacts

In Chapter 5 we saw from the analysis of the objects excavated from the Koyukuk River houses that most of those recovered, exclusive of faunal remains and the house superstructures themselves, were Euro-American trade goods or their derivatives. These were almost certainly obtained from native trade prior to the time of direct conjunction on the middle and upper Koyukuk in 1884-85. Trade, both precontact native trade as well as that with Euro-Americans, undoubtedly has had a strong impact on human behavior through time and has been one of the most effective agents of culture change. Of especial interest to students of culture change is the differential impact of trade on behaviors of those living close to vs. those, such as the Koyukuk, who lived in the hinterlands farther away from initial points of contact. But, to assess the differential impact of trade on behavior of those in our comparative universe, we must first develop a base for comparisons. These transactions include reviewing the nature of trade, the types of objects traded, the results from techno-historical analysis of trade goods and delineation of their country of origin, as well as assessing the types of indigenous objects recovered from the sites.

Inasmuch as the Koyukuk River sites are used as the referent for the comparisons in this chapter, the following overview of trade also reflects the Koyukuk experience. The nature and conduct of trade in other areas of Alaska and in the Yukon were in most respects comparable to that described for the Koyukuk, but for more specific information for other sites in this comparative universe see individual references cited for each discussed. Between 1833-1838 the Russians established trading posts at St. Michael on Norton Sound and at Nulato on the Yukon; and about a decade later, in 1847, Alexander Graham Murray, a trader with the Hudson's Bay Company, started a trading post at Ft. Yukon (cf. Chapter 2). Until direct conjunction in their own territory in 1884-85, Native traders from the middle and upper Koyukuk obtained most of their imports either directly from the Nulato and St Michael posts on the Yukon or at Nuklakayet, a pan-Native trading site at the confluence of the Tanana with the Yukon. Koyukuk entrepreneurs did not go to Ft. Yukon to trade because of hostile relations with the Gwitch'in in whose territory this post was located. Further, some traders did not go down to the Yukon, but instead traded through local intermediaries.

Prior to, as well as in many instances after the time that the trading posts opened, some Euro-American goods were obtained at intertribal Native trade fairs held at neutral boundary points between tribal areas that were readily accessible to traders from several different tribes. Nuklakayet, mentioned above, has been documented as being an important precontact trade fair location on the Yukon. White man's goods traded at interior fairs were ones Native traders had obtained earlier from Russian and British posts established in Southwestern Alaska, on Kodiak and St. Lawrence islands, and in Canada. Even prior to the time of initial white contact with Native people along the coast of northwestern northern North America, some trade items were obtained directly from Siberia through intercontinental Native trade links. These early Native traders followed well-defined traditional routes whose origins are lost in antiquity (McFadyen Clark 1974), their protohistoric and historic florescence (Ray 1975) not withstanding.

In the Koyukuk region, trade was both intertribal as well as across linguistic boundaries and was conducted both with other Athapaskans and with Inupiat. The time depth for transcultural trade in this interface region is unknown, but evidence from both oral tradition and archaeology illustrate that it was far-reaching and included exchanges through Native links with tribal peoples from both northern Canada and Siberia (Zagoskin 1967; McFadyen Clark 1974; McFadyen Clark and D. Clark 1976; Morrison 1991).

One of the important side effects of intertribal Native trade was that of bringing individuals from diverse groups together and through time promoting exchange not only of goods but of ideas. Both the nature and conduct of Native trade in this northern interface region has been touched upon briefly in Chapter 2. Here, however, our interest is not on the mechanisms of trade per se, but on the objects traded.

To understand and thus compare similarities and differences among the trade goods as well as the indigenous objects excavated from the several sites in our comparative universe, it is advantageous to not only identify the objects but also to understand their purpose, their origin, and how, when and where they were made. The results from this type of techno-historical research, especially on the Euro-American imports, provide information not only about the objects themselves but also provide insight into the nature of trade contacts, referents for assessing the validity of oral tradition accounts of traditional Native trade, knowledge about sources of materials and illustrates the significance of using imported objects for raw materials to make indigenous artifacts.

Artifact discussions follow the order of their presentation in Table 5.1 in the preceding chapter. Three types of analyses are included: techno-historical, ethnohistorical, and distributional, although the first is used only for imports. Most of the techno-historical research on the Koyukuk River artifacts was conducted by Mr. G. D. Rider while he was employed by the National Museum of Man on a student work programme. For items not noted, no especially relevant information has come to my attention.

Imported Objects

Before analyzing the goods found in these sites it is important to review the lists of items of non-indigenous origin available either from white traders or through native middlemen in order to develop a better perspective on the types of objects one might expect to find in both contact and protocontact sites.

In 1842-43, when Zagoskin explored interior western Alaska from St. Michael on Norton Sound and Nulato on the middle Yukon, the trade goods he took with him on his two trips to the middle Yukon and the lower Koyukuk came largely from Russian stores in Alaska, although some of the items were ones he brought with him directly from Russia (Zagoskin 1967:148, 161) These included:

beads (red, white, black, steel-blue, blue tubular)
dentalium
needles
combs
bracelets, rings, earrings
long-stemmed Yakut (Gamza) pipes

Yakut knives
small hatchets, "Aleut" hatchets
tobacco
tinker bells, small bells
flints
small mirrors
scrapers [not described]
tin plates
hollow buttons and naval uniform buttons.

He notes that his chief "exports" to the Natives in the Nulato area between 1838 and 1844 were beads, shells (dentalium), pots, copper jugs, and articles of iron, and that they were beginning to ask for European fabric shirts, dresses, caps and blankets for summer use. A substantial number of the items listed above were low bulk, non-perishable trade goods, many of which were in the luxury or non-utilitarian class (see comments in Oswalt 1980:96-97). Fabrics and clothing were yet to come, and foodstuffs would not appear in variety until modern times. Zagoskin (1967:152) also learned from the Natives that some iron objects and tobacco, as well as indigenous coastal materials, were reaching the Koyukuk through "Eskimo" traders.

While discussing Russian competition on the Yukon River, Murray (1910:45, 71-72) states that the items listed below were ones the Russians were trading to Natives on the Yukon in 1846-47. The source(s) of Murray's information is unclear, but he may have obtained it either from Indians trading at the Hudson's Bay Company post at Fort Yukon or through Bay Company relationships with Russian American Company staff in southeastern Alaska. Uncertainty also extends to the accuracy of Murray's list of items shown below that he thought the Russians were trading.

beads (red, white, blue in several shades)
dentalium
guns (fine and common)
powder
knives
pipes
tobacco
blankets
capotes and cloth (reportedly almost none traded)
powder horns
fire steels
files
iron hoops for arrowheads
iron pipes [?]
"common arm bands"
awls

rings and small brass coins with which women fringe their dresses
blades (e.g., a plane hafted as an adze).

Both Murray's as well as Zagoskin's lists contain non-perishable items that have as yet to be recovered from archaeological sites that were inhabited at the time of initial Yukon River contact and exploration.

By the time the Koyukuk houses were occupied, probably during the 1870s-1880s, the preceding lists had become obsolete and new merchandise had become available, although some items acquired earlier and retained for two or three decades might now find their way into archaeological contexts. In 1867 Dall (1870) traded or saw traded to the natives on the Yukon River many of the same goods, specifically the following:

powder
balls
caps
knives
beads (black and white pony beads are present on dolls he collected during his expedition)
flints and steels
needles
small mirrors ("looking glasses")
handkerchiefs
woollen scarves
cotton drill or calico (use of fabric tents by some Indians is recorded)
tobacco

Dall's list seems to be too brief, but I have not been able to locate store lists for either the end of the Russian period or the initial American period on the Yukon River. The extensive inventory of goods at Sitka in 1867 (Oswalt 1980: Appendix IV), much of which was not of Russian origin, may have little relationship to what actually was carried at Nulato and St. Michael. Oswalt (1980:98) notes that most items on that list were not imported to the Kuskokwim River, a region nearly as remote as the lower Yukon. But, beginning in the 1880s there were prospectors and other outsiders on the Yukon River, and by that time one may expect to find a trade inventory very much like that of a small general store from the same period without items directed towards agriculture, animal husbandry and carriages or riding. Certainly, before direct home territory contact in 1884-85, the Koyukuk had access to a notable inventory of contemporary goods and equipment.

Firearms. These are represented indirectly by shot, balls, powder cans, cartridge cases, cap or primer cans, and directly by the following gun parts.

Trigger Guard. The incomplete trigger guard appears to be from a musket or muzzle loader, but differs from iron trigger guards of the "Northwest" trade gun. Although the piece has not been precisely identified, particular elements to note are its short length (it is said that Northwest gun-guards were long and designed for use with a mittened hand) and the use of brass. The style of engraving appears to be Continental rather than English, French or American (Hanson: letter cited below; Barrie Rich and Bruce Norton, Historic Sites Service, communication to G. Rider). An example from a trade gun recovered at Tikchik (VanStone 1968) differs from the Koyukuk specimen in the manner indicated above. The guard and the lockplate (below) could have come from the same model gun, although they are from different sites.

Lockplate. This piece may be from the old Tula arms works in Russia. The lockplate has been identified tentatively as from a back-action percussion fowling piece, probably manufactured about 1855-1865 (letter from Charles E. Hanson, Jr., The Museum of the Fur Trade, to G. Rider). A differing tentative identification derives the plate from a pistol (Barrie Rich, Historic Sites Service, Ottawa, oral communication to G. Rider) but the first suggested type of arm would have been more likely and practical in the Koyukuk context.

Zagoskin (1967:132) records that for his 1842 trip to Nulato and the lower Koyukuk area he had a variety of firearms of Tula and other manufacture, including rifles, muskets, shotguns and pistols. He found the muskets unreliable, but percussion-cap shotguns were very good, especially a Hudson's Bay Company gun that could be used either for shooting birds with shot or for animals -- the fact that Russian traders used certain goods of their competitors is of further significance. As late as 1880, Murdoch (1892:193) found that although the Eskimos of northwestern Alaska had been obtaining arms from American whalers from 1854 onward, they still had some double and single-barrelled Russian guns stamped "Tula" (in Russian characters).

Musket Balls. Musket balls are reported for a number of west Alaskan and Yukon valley sites -- Three Saints, Nushagak, Kolmakovskiy Redoubt, Akulivikchuk, Tickchik, Kijik, Crow Village, Ft. Reliance -- but only in small numbers: one to six specimens per site. Usually there is a casting ridge indicative of production in a mould. Sizes of 9, 10, 12, 14, 15, 16 and 18 mm are reported; 15 mm is common and I suspect that the several sizes reflect, to a degree, lack of standardization in ball production.

Percussion Cap Cans. Percussion caps, cap containers, balls, powder cans and gun parts found together with cartridge cases show that muzzle loading guns were used concurrently with repeater rifles.

The Eley Brothers of London marketed caps for percussion or cap-lock rifles until relatively recently and also primers for reloading centerfire cartridges, both in a variety of containers. Specifications differentiating between cap cans and primer cans have not been found, but inasmuch as no evidence for centerfire ammunition was recovered, while musket balls were recovered, it is likely that the containers were for caps. Can lids from Kijik (VanStone and Townsend 1970) are identical in size and depth to the Koyukuk specimen, but appear to lack the Eley marking, although rust somewhat obscures detail. However, a flanged, unsplit base which fits and appears to belong to these

Kijik tops is different from the Koyukuk bases. VanStone and Townsend tentatively identify these as cap cans, although both caps and primers were recovered at Kijik. Additional varieties of cap and primer cans come from Kijik, Crow Village and Akulivikchuk. A 39 by 17 mm Eley can from Crow Village (Oswalt and VanStone 1967:64) probably is the same type item as the Koyukuk cans.

Percussion Caps. Caps -- one plain variety for pistols and one flanged variety for muskets and rifles -- are reported for a number of west Alaskan sites. None was found at the Koyukuk sites reported here, but their use is inferred and flanged percussion caps were recovered from the late or terminal 19th century Siruk house on the Alatna River (R. Morlan personal communication).

Zagoskin (1967:132) noted that he had a good two-percussion-cap shotgun in 1842, which is a very early reported usage of caplocks. Butler (1972:82) ascribes their appearance in the United States to 1841 and in England not until 1848. Dall (1898:106-107), who was on the Yukon in 1867, reported that the natives who traded at Fort Yukon preferred flintlock guns sold by the Hudson's Bay Company, because percussion caps were not always available. Does this mean that the Russians were trading percussion-lock guns?

Powder Cans. Canisters impressed "PATD 1859" and colored light green are identified as Eagle Gun-powder -- Dutch Shooting #2 Brand, marketed by the DuPont Company. The date refers to the patent of the container which probably was used until the 1880s (J. Twillinghast, Marlow N.H. letter to D.G. Rider). The significance of a minor difference in the present cans ("PAT." instead of "PATD") has not been determined. DuPont cans with stamped base also were colored red or black (R.A. Howard, The Hagley Museum, letter to D. Rider). Such cans were similar to Hazard cans, but the latter lack the stamping and in some cases were not the color used by DuPont.

Powder cans of similar format were recovered from the west Alaskan sites of Crow Village, Tikchik, Akulivukchuk, Kijik and Nushagak as well at Fort Reliance in the Yukon. Two sizes and varieties were recovered at Kolmakovskiy (Oswalt 1980:125). None of these, however, bears the date stamp, although extreme rusting may obscure details. Screw caps from Nushagak and Tikchik are identified with Hazard cans (VanStone 1968, 1972). A cap from Akulivikchuk has concentric circles like one of the Koyukuk caps; an additional specimen with the initials C.P.W./S.F. Cal is like one from Kolmakovskiy (VanStone 1970; Oswalt 1980).

Cartridges. All recovered cartridge cases are from .44 Henry Repeating rifle ammunition, used in the Henry and in the Winchester Model 1866 or Improved Henry rifle. Similar ammunition also was used in single-shot rifles, but the presence of opposed, double firing-pin strikes, or impact indentations, are indicative of the Henry rifle.

The raised "H" headstamp, found on all cartridges in the present collection, was used from about 1866 to 1890 (Smith 1954), in contrast to ones with a sunken "H" which were manufactured from 1873 until well into the present century by the Winchester Repeating Arms Company. Cartridges with other headstamps, or none at all, have been recorded from other areas. Another criterion for dating cartridges is slight variations in length. All from the Koyukuk are about 0.89 inch long up to the rim of the head or slightly over 0.9 inch long (23.7 mm), including the head without secondary

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swelling said to occur from use in the Model 1866. This dimension indicates that these cartridges are a late form of the .44 Henry flat case, which reportedly was 0.85 (or 0.875) inch long (Barnes 1965). Early forms of the same case are 0.815 and 0.822 inch long. I have not determined when the change occurred (see Barnes 1965, Logan 1959, Smith 1960, Williamson 1952). For comparison, the following measurements were taken on the Kijik collection (VanStone and Townsend 1970) at the Canadian Museum of Civilization. This is a relatively late collection and has no raised "H" headstamps. The following measurements include the head:

Recessed "H":	0.912 inch (23.2 mm)
"P" headstamp:	0.826 inch (21.16 mm), reportedly dates about 1880
Obscured by hole in end:	(21.45 mm)
No headstamp:	0.89 inch (22.6 mm), hole drilled in side
No headstamp:	0.91 inch (23.1 mm).

From the above measurements, it can be seen that the .44 case has many variables.

Flat Henry cartridges are essentially universal in western and interior Alaska and the Yukon Territory in late 19th century and initial 20th century sites.

Arms Discussion. Two categories of firearms are represented in the Koyukuk collection: muzzle loaders and rim-fire breech loaders. Probably the houses were abandoned before their inhabitants owned more modern breech loading centerfire rifles, but such rifles were in the hands of the few contemporary whites in the Yukon valley and probably also were owned by some coastal natives. Early muzzle loaders were flintlocks and caplocks, but I have not established that any flintlocks were used on the Koyukuk. Nevertheless, flintlocks were used widely in Alaska: on the Pacific coast where they date to the beginning of the 19th century and in some cases are of Russian derivation, and in western Alaska where they are widely represented in remains from historic sites and are noted in contemporary reports. In eastern interior Alaska this type of arm was obtained from the Hudson's Bay Company. The Northwest gun variety of flintlock was manufactured until nearly the end of the 19th century (Hanson 1973).

Reporting on affairs on the Yukon River, Murray states that in 1846 the Russians had traded guns to some Rat Indians, a Kutchin group (Murray 1910:49) located near the Alaska/Yukon boundary. The Russians were especially eager to obtain dogs, but the Indians were unwilling to part with them, thus the price was said to have been one gun per dog. Murray also stated that the Russians had "both fine and common guns, but our guns are always preferred to theirs" (1910:71-72). Zagoskin's (1967) remarks on the types of muskets and pistols used by the Russians at Nulato in 1842 bear this out. The Russian arms then were said to be both inferior and clumsy. In no case is the exact type or model of gun traded specified, but Indians trading at Murray's post, Fort Yukon, showed a preference for flintlocks. In a list of Gwitch'in words for trade items, given by Murray, there are terms for gun, gun flint, etc., but none for percussion cap. Oswalt recovered a single English-style flint from Russian-period layers at Kolmakovskiy Redoubt (Oswalt 1980:125 & Pl. 12c). The Russians distributed "Continental cut" flints from St. Michael in 1867 (memorandum B. Tyler to A. Clark reporting information from A. Woodward, 7 October 1977). One of these specimens is illustrated in A. Clark 1974a:59.

Two decades after Murray wrote about Fort Yukon, William Dall found that in dealing with the Yukon division Koyukon tobacco and ammunition were the great staples. Units of measure in trade were a ball, a charge of powder, or two caps (Dall 1870, 1898). The Koyukuk division of the Koyukon undoubtedly received similar goods, but less directly. They were supplied through Inupiat and whaler trading links as well as from the Yukon River. Dall's information suggests that in 1866-67 the Yukon River Koyukon were using caplocks but had no repeater rifles. Whymper, who at times was Dall's companion, states that the natives of Norton Sound had both flintlock and percussion-cap guns, some of which were obtained indirectly from Fort Yukon (Whymper 1869:139).

Flints, flintlock parts, and caplock (percussion) parts occasionally are found in Alaskan sites. These include English gun flints from Akulivikchuk and Kolmakovskiy, the flintlock and other parts of a probable Northwest gun from Akulivikchuk (Oswalt 1980; VanStone 1970), and flint and percussion locks from Kijik. VanStone and Townsend (1970) note that the trader at Tyonek, a post close to Kijik, still carried bar lead, black powder and percussion caps in 1907.

The Model 1860 Henry rifle was patented in 1860 but few were produced prior to 1863. It became readily available at the end of the US Civil War, but was soon succeeded by the Winchester Model 1866 (Improved Henry). Production shifted to the latter in 1867 and continued until 1875 when the Model 1866 was superseded by the Model 1873 -- a .44/40 centerfire rifle. New post-1875 models are not represented in the Koyukuk house site collections reported in this study. The Model 1860 held 15 shots in the magazine, as also did some styles of the Model 1866. Koyukuk River Athapaskans and Inupiat were especially impressed by the Henry repeating rifle and discussed it with me on numerous occasions. To them its name was "15 times." An 1866 Winchester carbine, however, held 13 shots and an octagonal barrel sporting rifle held 17 rounds in the magazine (Butler 1972). Nevertheless, in the United States all were referred to as 15 shot repeaters. When I learned at Allakaket that the native name for this rifle was "15 times", I initially thought that the name was native coinage, but the probability that this is an introduced trader's name also should be considered.

In the Tanaina Athapaskan area, Henry rifles were available at Tyonek on Cook Inlet in 1876 and at Iliamna at least by 1873 in spite of a federal ban at that time on the sale of breech-loading rifles to natives (VanStone and Townsend 1870:142). Other trading posts and ship-based whaler-traders provided further sources for arms. Starbuck (1878:450-451) reports that Athapaskans and Inupiat first obtained guns from whalers at Kotzebue Sound in 1850-1851.

When the famous Koyukuk Chief, Moses, an Athapaskan who sometimes went to the coast to trade with Inupiat at Kotzebue instead of trading through Kobuk intermediaries, was a young child (late 1850's), he reportedly saw one of the first rifles traded to the Koyukuk by Kobuk traders. The following is a summary of the incident related to me in 1961 by the elder, EB, Grandson of Chief Moses. During the winter when Chief Moses was about 7 or 8 years old, he was living with his parents in a semisubterranean house near the middle Koyukuk. His Father's Inupiat trading partner from the Kobuk River came to visit and brought a rifle as a gift. Before they went to bed the night the visitor arrived, the Kobuk man shot the rifle to demonstrate how to operate it, then hung it in a tree. Little Moses was so excited by this event that he spent almost the entire night getting up and running out the tunnel entrance to the tree where the rifle was hung so he could touch it, then returning to bed.... In addition to learning about this new weapon, he almost lost his feet from frost-bite.

As late as 1879-81, Nelson (1899:231) reported that the majority of guns used by Inupiat in northwestern Alaska were still muzzle loaders. Evidently they also had a number of breech loading rifles at that time, inasmuch as cartridges were one of the most highly desired trade items. Shortly thereafter, Murdoch (1892), whose observations center on the Point Barrow area, noted that in 1881-83 the most popular arm was the Winchester 15 shot repeater. He does not specify whether this was the Model 1866 or the centerfire Model 1873. Allen (1887) noted that in 1885 the Koyukuk Indians had Winchester .44 repeater rifles, as well as muzzle loaders, but that the rifles often could not be used because of a shortage of ammunition. In 1970, J.W., an Allakaket elder recalled that about 1902 or slightly later, when he was first old enough to note such things, his father (B.W.) had a 38/55, a 45/70 and a 45/60 rifle. The person who supplied this information was too young to have observed the first appearance of centerfire rifles. White (n.d. a) notes that in 1900-01 muzzle loading shot guns were still in use at Dall River, while older type rifles had been replaced by modern ones.

In the 19th century after traders were well established on the Yukon River, people living on the Koyukuk still continued to obtain powder, shot, lead, cartridges and caps from the Kobuk River. Breech-loading rifles and ammunition were contraband until the end of 1896 (Bettles n.d.:16; Oswalt 1980:49-50) and thus were not readily available from established trading companies. It is less apparent why people living as far south as the Huslia region on the Koyukuk did not obtain other ammunition, e.g., legal ammunition, for muzzle loaders from the Yukon River traders. Possibly they preferred to maintain their traditional trading and other sociocultural ties with the Inupiat from whom arms were first obtained, instead of relinquishing them and establishing new alliances.

Anecdotal accounts report early firearms on the Koyukuk, but usually the gun model cannot be identified or the event closely dated. The following is an example (field notes 1968).

> While on a hunting trip to the south, some Lake Creek people came together with some Yukon River people [branch of Koyukon]. Two of the latter had guns. They saw some caribou and went to hunt them, the Lake Creek men with bow and arrows leading, those with guns following. When the Lake Creek people came close to the caribou they sat down. The Yukon River people said to each other 'after they shoot them with arrows we will shoot them with rifles.' Then old man Kodaganto, who was boss at Lake Creek [genealogy 2 Chapter 3], said, 'well my boys, let's get them, you know lynx used to run down game.' The Lake Creek boys got up and ran after the caribou. They left the Yukon River people following behind as best they could with their heavy guns. Soon the Yukon hunters came to dead caribou, and eventually one of them got a wounded one that was being chased back. Then they packed the meat to one place and had a 'potlatch' at which the leader of the Lake Creek-Todatonten hunters made a speech directed towards the Yukon men. 'You fellows should have known people around here have light caribou parka and you should have known they run fast.'

This account clearly documents one of the first times the people who lived on the Middle Koyukuk had the opportunity to observe the use of guns on the hunt. Interestingly, it also illustrates hunting techniques, particularly running down game.

Crooked Knives. Many crooked knives used in northern Canada and Alaska were hand made locally; others were trade items, although I do not have information on crooked knives sold in Alaska. This object is still used for making snowshoes but in the 1970s and 1980s not everyone owned one. Crooked knives often are passed down as heirlooms, and it may be for this reason that they are infrequently recovered from archaeological sites.

Pocket Knife (Jack-knife). Pocket knives were recovered at the Kijik and Klo-kut sites (VanStone and Townsend 1970; Morlan 1972). These are similar but not identical to the Koyukuk specimen. Stylistically, the knives are compatible with a late 19th century date. Whymper (1869:175) reported that while travelling along the Yukon River he was short on trading supplies and at times gave away his pocket knives and other personal items. In contemporary times one may still observe a few Koyukuk women butchering caribou with pocket knives. This implement is suitable for all but the heaviest operations. For these the tool of choice is a hatchet or boy's axe.

File. Machine-made files date from the middle of the 19th century to the present in the United States. The small fragment recovered was not analyzed but probably is not distinct from small modern triangular files.

Scraper or Adze Blade. Northern people have improvised a wide range of scraper blades from various objects such as sections of pipe and copper tubing. If it is a scraper blade, the Lake Creek specimen shows that such innovations are at least over a 100 years old in that region. The specimen, however, may be a light adze blade possibly made from recycled iron. About 1847 Murray recorded that the Russians traded blades that were hafted and used as adzes instead of trading axes. Zagoskin (1967:153) confirms this statement and mentions that the natives [on the lower Koyukuk in 1843] "have as yet no skill with our 6-pound axes, and for this reason seldom make use of heavy timber." The structural evidence reported here shows, however, that within another three decades the Koyukuk people had become adroit axemen.

Serrated Ulu Blade. Ulus made from salvaged sheet metal have been found at several west Alaskan sites (Akulivikchuk, Kijik, Tikchik, Crow Village) and in the western Canadian subarctic. These generally are made from can metal or later from saw blades, although sheeting from old kettles was used in Canada. A small back-hafted knife similar to the Eskimo ulu was used on the Koyukuk for cutting babiche, skins and sometimes fish. The larger ulu for cutting fish probably is a later historic adoption, although very large slate ulus were used for this purpose in protohistoric times by the Yupik Eskimos of southwestern Alaska.

Wood Screw. Several sizes of wood screws were recovered from Kijik (VanStone and Townsend 1970). They are similar to the Koyukuk specimen, although they may be more recent.

Spoon. The spoon basin excavated from the Lake Creek Site has been identified tentatively as nickel-plated steel. It probably was obtained from American traders, but it is similar to abdullah tinned iron spoons imported into Canada by the Hudson's Bay Company from the 1860s through the 1870s (oral communication Patricia Lockwood, Historic Sites Service to G.D. Rider). A ridge on the short stem remnant shows that the spoon was stamped as a single piece, but thickening at the basin is an attribute of moulding in which the stem is attached as a separate piece. Teaspoons recovered from Akulivikchuk, Crow Village and Kijik differ from the Koyukuk specimen, although some from Kijik also appear to be stamped from thin iron sheet but without thickening where the handle joins the basin.

Folded Metal Pans. Folded metal pans have been found in a number of west Alaskan sites, especially Crow Village, Tikchik, Akulivikchuk and Kijik. The authors reporting these specimens have commented on their innovative aspect which appears to be modeled after folded birchbark containers.

Cartridge Slipped over Shaft (blunt arrow). Cartridge cases slipped over a shaft to produce blunt or sometimes toy arrows are ubiquitous in northern North America. Obviously, this artifact in that form cannot predate the introduction of rifles, presumably the .44 Henry. There would be some potential for analysis to determine the origin and spread of this trait. A specimen with the .44 Henry raised "H" headstamp was found at Akulivikchuk. Others utilize plain .44 cartridges or later centerfire cases.

Military-style Button. General service brass buttons, common to all service branches, similar to the one recovered, were introduced by the U.S. Army in 1846 and became regulation in 1855. The style changed to one of Prussian influence in 1872 (Campbell 1965: fig. 20). The button probably was manufactured by the Scovill Manufacturing Company whose buttons with this face design were used until 1902 in civilian applications (E.H. Davis, Apparel Fasteners Division to D.G. Rider). Military buttons were a common 19th century trade item among Russian, Hudson's Bay Company and American traders (Whymper 1869:177; Woodward 1965:24-25); and copies of military buttons were used widely on civilian clothing, often decades after they had ceased to be used by the service. In the present case the mark "Extra Quality" indicates civilian origin, especially if the manufacturer was Scovill. Therefore the button probably cannot be closely dated.

Earthenware Sherd. This type of ceramic generally is considered to date to the late 19th century (Lynne Susmann, Historic Sites Service, oral communication to G. Rider). Superficially it does not differ markedly from thick plainware available today. Substantial amounts of both plain white and decorated pottery have been recovered from Alaskan and Yukon sites (cf. D. Clark 1995; VanStone and Townsend 1970; Oswalt 1980) but no sherds utilized as implements have been reported.

Glass Buttons. "Sew through" buttons, such as the three recovered from the Koyukuk, generally date to the 1840-1880 period (DiAnne Herst, Historic Sites Service oral communication to D.G. Rider), although milk glass buttons were not manufactured in the United States prior to about 1860. Similar buttons, commonly used on underwear, have been recovered from most Alaskan historic sites.

Kaolin Pipe Stem. D. McDougall and Company, Ltd., whose name is stamped on the pipe stem, came into existence in 1846. Production continued until 1967 (Walker and Walker 1969:132; Walker 1971:23). The McDougall firm was known as the Glasgow Pipe Manufactory, and, originally, as Duncan McDougall. Between 1871 and 1909 it was renamed D. McDougall & Co., and then the firm became "Ltd" (Walker and Walker 1969). I have not determined if the lettering on the stem kept up with these changes; however, pipes exported to the United States after 1891 were marked "Scotland," in compliance with United States regulations requiring that the country of origin be indicated. Otherwise, lettering reportedly was dropped after the 19th century. The Lake Creek pipe apparently was manufactured before 1891, and it could be much earlier and of Hudson's Bay Company origin.

Dall (1898:82) mentions that the Hudson's Bay Company gave tobacco-filled clay pipes to Indians as presents when they came to trade at the various forts, including Ft. Yukon in 1867. Pipes of a different form, such as the Yakut gamza (Zagoskin 1967) were used on the coast by the Inupiat who obtained them from the Russians. They also made their own pipes. Clay pipes are so uncommon in Alaskan sites that one might question whether or not they were stocked by Russian traders and later by the American traders. A single McDougall specimen, lettered the same as the Koyukuk one, is attributed to Russian layers at Kolmakovskiy Redoubt (Oswalt 1980:Appendix I, p. 139). Recovery of numerous fragments at Fort Reliance in the Yukon Territory (D. Clark 1995) nevertheless shows that the American trader there, affiliated with the Alaska Commercial Company, was importing these pipes. Possibly they also were stocked at other Alaska Commercial Company stations, although another explanation is that this was a special import to serve former clients of the Hudson's Bay Company which no longer was operating in the Fort Reliance area. VanStone (1955:123) notes that in the United States clay-stemmed pipes had been replaced by reed-stemmed pipes early in the 19th century.

Glass Beads. Glass beads are the subject of an extensive literature. They were made in only a few major manufacturing centers, but were distributed globally by numerous intermediaries who represented wholesale trading firms. Alaskan beads are essentially conservative and temporally marginal. Only in late sites such as Kijik does one find a range of polychromatic and variously shaped beads. Those used and traded in Alaska, even late in the 19th century, are similar to ones which may be one or two centuries earlier elsewhere (VanStone and Townsend 1970; VanStone 1955 and other works cited above). Nevertheless, one finds temporal patterns within local areas. For local comparisons, see the bead typology used in Table 6.2. In this table, diverse beads may be grouped into a single category in certain instances, but in particular the following distinctions are made.

Size. Seed beads, arbitrarily defined as 2 mm or less in size, are set aside as a single group. The others are primarily pony beads, although there are a few larger ones.

Manufacturing technique. Faceted and wire-wound beads are distinguished from all others. The majority of others are rounded or refused cane tube fragments, but there also are a few globular beads, some large barrel-shaped beads, and some slightly biconical ones which appear to be moulded.

It should be noted that late-dated tube-type seed beads from Yukon sites not included in the present analysis are either hexagonal in section or faceted, unlike the Koyukuk River specimens.

Color. Usually the members of any one group vary only in shade, but there are some exceptions.

Discrete types and varieties. Some entries in Table 6.2 represent a distinct type or variety, others do not. For instance, although there is an entry for white-lined Cornaline d'Aleppo beads, additional white-lined specimens are subsumed under the seed bead group, as indicated in the footnotes to Table 6.2. From Kijik there are also large barrel-shaped white-lined Cornalines which typologically may be compared closely with similarly shaped white beads.

Two trends are apparent from these data: both seed beads and white-lined Cornaline d'Aleppos increase in frequency through time. Seed beads probably are absent in Alaska at the beginning of the 19th century and do not become abundant until the last decade of the century. With a few exceptions, they are the only size bead used today. For the first half of the 19th century there probably were no white-lined beads, although Oswalt attributes white-lined beads to Russian layers at Kolmakovskiy (1980:Appendix II). During the period when the Koyukuk houses were occupied, white-lined beads became common but, regionally they were subordinate to the transparent-lined ones. By the end of the century, as illustrated at Kijik, the white-lined ones had become the more numerous. Further, in the Yukon Territory there is a 19th/20th century site from which only white-lined Cornaline beads were recovered (Workman 1978). At Fort Reliance both varieties are present. These two sites, which were serviced by the same trading network, show correspondence with the Koyukuk house sites and appear to crossdate within the 1870s and 1880s.

Exclusive of seed beads, through time whites, blues of many shades and varieties, blacks and Cornaline d'Aleppos of several varieties were the most popular. Green beads were rare and are not ranked with the others illustrated in Table 6.3.

The data are highly variable and appear to be subject to local and possibly idiosyncratic factors. For instance, one would expect the Russian Three Saints and Rolling Bay sample to be strong in black beads, as this was the case on Chirikof Island, but such a situation does not hold. A variable bead distribution between the Koyukuk houses also can be seen from Table 5.2 in the preceding chapter. The present analysis covers several spheres of ethnicity and traders' influence. I doubt, however, if this is responsible for variations in bead variety frequencies, but that can be tested when adequate samples become available. The primary sources for Russian, Hudson's Bay Company and American traders' beads may have been the same.

An examination of ethnographic specimens corroborates the temporal trend outlined earlier. Athapaskan specimens were examined at the Smithsonian Institution in 1972. Several pieces can be identified with collectors who were in the area during specified periods. Garments, accessories and dolls collected by Dall (1866-1868) from the Yukon River Koyukon and by Kennicott (1860-62) from the Gwitch'in of the northern Yukon Territory and northwestern tip of the District of Mackenzie show the following beads: blue, white, black, purple-black, translucent pink-red, and clear-lined Cornaline

TABLE 6.2. GLASS BEADS: COMPARATIVE DISTRIBUTION

Site	Three Saints Rolling Bay a		Chirikof I. b		Koyukuk Houses		Akulivikchuk		Tikchik		Crow. Vil.		Kijik		Ft. Reliance house pits k		JjVi-1 Yukon	
Contact dates	1785-1840? approx.		1790-1867 approx.		1870-1890		..1843-1890/ 1909		..1829- 1902/1909		early 1800s 1907/1910		early & 1902/1909		1874-1886		1880s 1900s	
Inhabitants	Russians, Alutiiks		Alutiiks, mixed?		Athapask. Inupiat		Yupik Eskimos		Yupik Eskimos		Yupik Eskimos		Atha- paskans		Atha- paskans		Atha- paskans	
Trade contacts	Russians		Russians Alutiiks/ Americans		Russians, Americans		Russians, Americans		Russians Americans		Russians		Indirectly Russians Americans		Americans		Canadi- ans	
Beads	No.	%	No	%	No.	%	No.	%	No	%	No.	%	No	%	No.	%	No	%
White	101c	66.4	68	26.5	100	5.8	360	67.0	248	60.1	245	58.9	706g	56	355	41.0	29	6.1
Blue	10c	6.6	18	7.0	615	35.9	70	13.0	63	15.5	100	24.0	43	3.5	100	11.6	88h	18
Black			115	44.8	477	27.8	16	3.0			19	4.6	18	1.5	47	5.4	19	4.0
Green					1	tr	4	0.7			3	0.7	18	1.5				
Cornaline d'																		
transparent	23	15.1	45	17.5	267	15.6	4	0.7	18	4.4	7	1.7	12	1.0	72	8.3		
white-lined			1	0.4	182	10.6	1	0.2	2	0.5	8	1.9	98	8.0	54	6.2	103j	22
Polychrome							2	0.4			2	0.5	22	1.8				
Faceted blue							1	0.2			8	1.9	62	5.0	4	0.5		
Clear							1	0.2					4	0.3				
Red			2+	0.8+			1	0.2			7	1.7	43	3.5	1	tr		
Pink, pink-red					7	0.4							4	0.3	1	tr		
Lt. purple-- black purple	18	11.8			38	2.2											56	11.7
Wound			2	0.8					5	1.2							11	1.3
Other					11d	0.6	1	0.2	3	0.7	1	0.2	19f	1.6	3	0.3		
Seed beads d			6	2.3	16	0.9	76	14.2	68	16.7	16	3.9	229	18.6	217	25.1	184i	38
Total	152	99.9	257	100.1	1714	99.9	537	100.0	407	99.1	416	100.0	1229	100.6	865		479	100.1

Notes to Table 6.2:

a. Dates of contact: the later date is for abandonment, the earlier date is when contact occurred or site was established. The Russian facility at Three Saints Bay was primarily occupied from 1784 until shortly after 1805.

b. Chirikof Island beads were found in blowouts in a cemetery area not likely to have been used after 1867.

c. Among the Rolling Bay and the Three Saints beads there are 11 spheroidal specimens, and among the Koyukuk collection two beads 8-11 mm in diameter. These are distinctly different in form than the smaller smoothed cane beads.

d. Seed beads are 2 mm or smaller except for the Koyukuk where the range of a discrete seed group is 1.7 -2.4 mm in diameter and 1.0 -1.9 mm in length. Oswalt (1980:67) also found that Kolmakovskiy Redoubt seed beads formed a discrete size category.

e. Nine of previously described group 5 are brilliant colored, almost cobalt blue.

f. These are true yellow beads, not weathered to that color. Yellow also appears in traces at Crow Village and Tikchik.

g. The 706 white beads may include as many as 50 seed beads. The authors provide recovery data by color and distinguish seed beads, but this information was omitted for the white group.

h. Included are 22 vitreous blue beads.

i. The seed beads include hexagonal tube fragments which probably are one of the more recent forms.

j. In addition, there are 31 white-lined Cornaline d'Aleppo seed beads, thus raising the total of this type to 134 or 28 percent at JjVi-1; at Kijik there are 13 white-lined seed beads raising the total of this type to 111 or 9 percent.

k. This column is restricted to collections from five housepits which it is believed can be attributed to Han Athapaskans (D. Clark 1995). Most of the seed beads came from a single house.

TABLE 6.3. RANKS OF FIVE BEAD CLASSES

	Number of times in rank				Number of times in top 4 ranks at nine sites	Score*
Rank	1st	2nd	3rd	4th		
White	6	1		2	9	7.25
Blue	1	3	2	3	9	5.0
Cornalines		2	5	2	9	4.5
Black	1	1	2	1	5	3.0
Purple			3	3		1.5

*4th is one point, 3rd two points, 2nd three points, 1st four points, divided by four.

d'Aleppo, including some that are more red than terracotta in hue. There are no seed beads in this group. Most could be described as old-style pony beads, and to a very substantial degree, they coincide with the beads found in the Koyukuk houses.

Objects collected by Nelson (1880) and Turner (1874-1881, probably in 1874-76) in Alaska and a single piece obtained through B.R. Ross, Hudson's Bay Company, between 1859-62 from the Peel River, have examples of the old-style beads noted above. In addition, there are tiny clear-lined Cornaline d'Aleppo beads on a Nelson piece, white-lined Cornaline d'Aleppo on specimens from all three collectors, and dense, "hard-colored" opaque seed beads on an Innoko River shirt collected by Nelson. Among earlier beads, a slight degree of translucency makes the colors "soft."

The Kennicott and Dall collections probably reflect beads obtained from both the Hudson's Bay Company and Russian American Company traders and thus permit one to make the supposition that prior to 1867 neither seed beads nor white-lined Cornaline d'Aleppo beads were used in the area. Ten years later, in the Nelson and Turner collections, we find that both of these types are now in use. Possibly the change is correlated with the advent of American traders on the Yukon River, although there always had been alternative sources for trade goods. The white-line of Cornaline beads on the early Peel River shirt may represent an early diffusion westward from regions to the east and south where this bead variety appeared earlier than it did in Alaska. It may be noted, however, that Oswalt found both seed and white-lined beads in layers at Kolmakovskiy Redoubt that he attributes to late Russian occupation (Oswalt 1980:Appendix II and p. 107).

Murray (1910) reported that in 1846 the Russians traded common and fancy white, red and blue beads. Woodward (1970:20) discusses the use of the term "fancy." It can mean flowered beads, ones with various types of inlay and certain wire laid (wound) beads. Murray's claim notwithstanding, anything that could be called "fancy" is rare or absent in collections from Russian period sites in Alaska. On his trip to the Koyukuk four years before Murray's arrival, Zagoskin took strings of red, white (or red-and-white?) and blue tubular and round beads and dentalium. A few purple or blue-purple tubular beads were recovered during this study. All other blue beads are essentially round, although technologically they are tube or cane beads, except the few in Group 6. Later, about 1867, Dall recorded that Koyukon women used red, black, white, dark blue and amber beads as ornaments for children. To limit their use to children is probably incorrect. Nevertheless, with the exception of dentalium, beads worn in strings or as necklaces appear to have passed out of use well before the end of the 19th century, prior to the first person recollections of any of my Native consultants. This is in contrast to the production of beaded accessories and garments which, in varying degrees of popularity, continue to be produced in the 1990s. Traditions from earlier times emphasize the importance of dentalium *git-lina* and amber *neltila* beads. The former can be seen today as rare heirlooms and museum pieces. Only one Koyukuk Athapaskan woman, L.S., had a small collection of amber beads in 1971. Amber was prized by Alaskan Eskimos from the Gulf of Alaska to the Arctic Ocean, and it is not surprising that similar value was attached to it by the Athapaskans. Dall's statement about amber beads, and possibly some traditional information about them, may refer to amber glass instead of to traditional amber. No beads of this color were recovered.

Indigenous Artifacts

Hide-scraping Stones. Stone slab hide-scrapers, which were still used in the 1970s, are called *dok-klkowa*. *Bikilowa*, the term more frequently used is the general term for hide-scrapers. The large moose hide scrapers were not only used to roughen the hides or produce a suede finish; they also generated heat which hastened drying. Such scrapers are ubiquitous in late prehistoric and historic sites in Alaska, the Yukon and Northwest Territories and elsewhere. They take a variety of forms, ranging from boulder flakes to edge-retouched tablets of schist and sandstone. Rainey (1939) noted their manufacture among the Atna Athapaskans of the Copper River who called them *tci-tho*, a term, variously spelled and widely used by archaeologists.

Whetstone. Rectangular bar and tabular whetstones, or elongate pebbles smoothed and worn by use, are common in contact period sites and earlier sites in Alaska (Oswalt and VanStone 1967, VanStone various; VanStone and Townsend 1970).

Strike-a-light, Making Fire. The fire drill with bow, rod and caribou astragalus bearing was known on the Koyukuk, but the principal method of making fire was by striking sparks. A hard rock denoted by up-river people as *tklass* and by downriver people as *tlat*, but also identified by both as *nihkluni*, may have been used to strike another rock, but in the procedure recalled for the end of the 19th century, steel was used. The method was as is follows:

Three to three and one-half inches were broken from the end of a file. This piece that was removed reportedly was heated, cooled, reheated and retempered in water. One Athapaskan consultant (J.W.) said, however, that no heat treatment was necessary -- the drawing of temper and retempering would occur when tools were made from files. To produce a fire a white stone, probably quartz, was struck against the metal and the sparks were caught in dried birch fungus or cottonwood "wool." In turn, the sparked starter was placed in wood shavings and swung to-and-fro or blown on. With luck, there would soon be a small flame. The strike-a-light method continued in use long after matches had been introduced. Highly prized fire-making equipment was kept in a small rectangular bag.

One stone recovered is thought to be part of such a kit. Similar pieces have not been identified from other sites in Alaska, except that Oswalt (1980) identified re-utilized gun flints from Kolmakovskiy as strike-a-lights. While the steel described to me, and probably used at the end of the 19th century was from a file, at one time fire steels and flints were traded in the Yukon valley. These are reported by Zagoskin, Murray and Dall, as noted in the introductory paragraphs on trade in this chapter.

Red Paint Stone. The only confirmed Koyukuk River source for red paint or *chih* is *Chih-ditzl-lithden* "Rock Paint Point." This locality is a bluff located in the Batza Téna area at a bend in the Little Indian River several miles up the stream opposite the upland where the primary Indian River obsidian source is located. The locality was on a winter route of travel, and people dug through the snow with their snowshoes to get pieces or nodules the size of a hen's egg from the adjacent stream bar. One unconfirmed locality was also reported for a creek near "Canyon" on the Koyukuk River, a few kilometers below the mouth of the Kanuti River.

Red paint rock in its natural form reportedly was dull red on the outside but black on the inside. This description suggests an iron-rich pebble or iron sulphide or oxide mineral naturally oxidized on the exterior. I collected two different recipes for making red paint, both variations of the same concept. Only the order is reversed. In the first recipe the paint stone was first soaked in fish-duck blood then roasted in an open fire until it turned red. After it cooled, it was pulverized and mixed with water in a stone basin. The other schedule states that the stone was first roasted in a fire until it turned red, then it was pulverized, mixed with fish-duck blood and thinned with water. Once the paint was prepared it was applied to the frames of snowshoes, sleds, wooden dippers, the outside of wooden platters, bows, arrows, and spears and to canoe frames with a "paint brush" made from fine wood shavings. Red paint was also applied to tanned trouser-moccasins worn at special functions; and of especial note was its use to outline seams on V-tailed dress shirts and other ceremonial clothing. The complete rationale for using red paint on clothing, weapons, items used in transportation and on other implements has been lost in antiquity, but some elder consultants believe that it had strong spirit power and was used to keep the wearer/user safe from harm. Others suggested that the main use of red paint in traditional times was as a preservative for wood and skin.

The only traditional red paintstone used at Allakaket in the 1960s and 1970s had been received as a gift to M.H. from a man who resided in another Koyukuk River community. I am not certain of its origin, although the person who gave it to M.H. implied that it had come from the Indian River source. M.H., who was using it on snowshoes at Allakaket, was largely self-trained, although very competent. He had tried to make his own red paint by roasting rocks but had not been successful. M.H. also used a stone basin to both mix his paint and as a paint palette that was very similar in size and shape to the one recovered at Lake Creek.

Probable paint palettes are reported from Akulivikchuk and Tikchik, but these are smaller than the Koyukuk examples. There are few reports of the actual recovery of red paintstone from Alaskan sites, but it can be assumed to be present inasmuch as its use is widely reported among both western

Eskimos and northern Athapaskan Indians.

One pigment fragment from Lake Creek was identified as hematite through spectroscopic examination at the Mineral Sciences Division of the Canadian Museum of Nature, and verified by the Canadian Conservation Institute at Ottawa. Canadian Conservation Institute staff, Neil Adair and Rosemary Ravindra, further tested four specimens for blood. The tests used were heamchromagen, heamestix and Cassel-Meyer reagents for blood. Three fragments of red paintstone and one hide scraping stone with adhering crust of red pigment (ScIc-1:213) were examined. Two of the pigment pieces were derived from larger chunks (ScIc-1:34, ScIc-1:47) which displayed ground facets that had resulted from being rubbed on a grinding stone. One of these also showed adhering char. These tests are very sensitive for dried and cooked blood but, according to CCI determinations, not to charred blood. Test results on the archaeological specimens were negative. Therefore, it appears that if the material had been soaked in blood, as one ethnographic recipe prescribes, subsequent roasting must have been so intense that it charred the blood beyond detection. Failure to detect blood in the ground pigment adhering to the face of a hide-scraping stone indicates that blood was not added to the pigment after it was pulverized.

Snowshoe Needle. The Koyukuk snowshoe filling needle *okkbikh* usually was about 7 cm long. In 1969 an older male resident at Allakaket showed me his own snowshoe needle, even though "filling" snowshoes was woman's work. As late as the mid-1970s some persons on the Koyukuk River still own and use such implements.

Birchbark Baskets. Birchbark containers were made in all sizes. Tops were sewn on those meant for food storage. Making and sewing things from birchbark was woman's work, but men obtained the bark and women secured the spruce roots which were used for sewing. In the Koyukuk region, bark was obtained in the spring when the trees were easy to peel. Formerly, the tree trunk was incised with either a rib straight knife *kkikoka* or a stone knife. The bark was then separated with the assistance of "any kind of little crooked stick."

Holes were made with an awl *tawot-tliga* -- down river *bawot-tliya* and *do-otila* approximate pronunciations -- which had a bone point about 7-10 cm long set in a handle. Later the bone point was replaced by a nail. Bone awls apparently were tapered. Consultants said that the same awl could be used for sewing clothing, but it had to be inserted deeper when it was used to make holes in birchbark. After the perforation was made, moist spruce root was forced through the hole by the awl. When waterproof baskets were required, spruce pitch was used to seal the seams. The pitch or resin was collected in March because it was hard and easy to collect at that time, especially when the snow was crusted and one could walk under the trees without breaking through.

Baskets and related objects may be categorized as follows:

- Urine baskets.
- Fishhead baskets -- possibly the same as the covered ones in which fishheads were stored frozen, partially frozen, or kept cool to make "cheese". Fish eggs also were stored in baskets to ferment.
- Berry baskets -- covered for storage.

- Large storage baskets -- about 4 feet high and 2 feet wide, packed on the back to the storage site with straps and a tump line.
- Womens' sewing baskets.
- Cooking baskets -- coated with fish-duck blood which reportedly kept them from burning. These were hung about one foot above the fire and are said to have very efficient for heating soups and other foods.
- Drinking bowls. In an old story a man drank from a birch "pan" that was used for melting snow.
- Plates -- not in general use by individuals until after contact..
- Baby carriers -- used as recently as the first decade of the 20th century, but possibly not by the South Fork band. There were two types: one a chair cradle; the other a baby packing basket.

I neglected to discuss the probable function of the mangled baskets from the Lake Creek, Kayak and Okak sites with our Native consultants. These apparently represent one or two types not necessarily included in the categories above. The shallow tray baskets may have been used for serving or as food-holding platters and possibly for melting snow.

Folded-corner birchbark baskets or fragments were recovered from Akulivikchuk, Kolmakovskiy Redoubt, Crow Village and the northwestern region of the Mackenzie District. Those from the latter region are estimated to have measured from as little as 7 cm square up to 18 by 30 cm. Baskets with folded corners also were made by Kobuk River Inupiat during the present century (Giddings 1952), as well as by the Ingalik Athapaskans on the lower Yukon River (Osgood 1940:133-142). Earlier birchbark containers from the Kobuk exist only as rare fragments of undetermined construction, but folded birchbark basket fragments from the Nukleet site on the coast are nearly 1000 years old (Giddings 1964:70-71). The earliest evidence for the use of birchbark for containers in Northwestern Alaska is from the *c* AD 500 Ipiutak horizon at the Deering Site excavated by Helge Larsen. At Deering the birchbark is well preserved and there is good evidence from that site that suggests the baskets were of the folded-corner variety (H. Larsen personal communication to A. McFadyen Clark, 1978). The preceding information on baskets suggests that folded-corner construction may be a long-established northwestern regional tradition shared by Eskimos (ancestral Inupiat and Yupik) and Athapaskans in Alaska, the Yukon and those living as far east as the northwestern Mackenzie plain. In Canada east of the Mackenzie plain baskets have not as yet been recovered from precontact sites. Those that date to the contact traditional horizon superficially resemble folded ones, but they have split and sewn corners and lack the seamless construction of those reported here.

Lighting. In the summer, with long days and living out in the open, lighting was of little concern. In the winter, with short days often spent in a windowless dwelling, light was a serious consideration. Surprisingly, no artifacts or residues recovered provide evidence of lighting, and on this subject there is little of note in old traditions or recollections collected from oral tradition. Queries produced the following information.

Wood shavings or light from the relatively low hearth fire were the primary sources used for illumination in the winter house. The shavings were three to four feet long, made of straight-grained wood, and were moistened so that they would not burn too fast. A great deal of effort was put into making them. There is conflicting information on the use of lamps. One consultant stated that there were no oil lamps downriver, in the Huslia area, until later times when "coal oil" was burned in improvised lamps made from baking powder cans. But upriver, consultants said that the Athapaskans had circular wooden lamps about nine to ten inches in diameter in which grease was burned, and that the wooden shavings described above were used at hunting camps, or when no grease was available. One South Fork Koyukon, J.W., and several Alatna Inupiat, O.N., J.E., and B.M., said that on the upper Koyukuk stone lamps that burned fish oil or grease were used in the houses and at camp. B.M. mentioned that her Grandmother used a cottonwood wick in hers. When B.M. was a young girl, she found an "old stone lamp" near their fish camp at Steamboat on the Alatna. Any receptacle in which grease or oil was burned probably would have an encrustation of charred grease at the location of the wick. No such item was found in the semisubterranean house excavations (field notes 1961-72).

Candles are reported to have been obtained for the first time when Chief Moses acquired them in trade from the Kobuk River Inupiat at an undetermined date prior to 1898, before improvised coal oil lamps came into use. They should have been available from Yukon River traders earlier, but specific information is lacking.

Regional Faunal Distributions, Cultural Factors and Patterns

There are a number of potential pitfalls in interpreting faunal analyses. Prevalence or absence of faunal remains, species representation and condition of elements are affected by cultural factors. These factors include culinary and ritual or respect norms. Natural factors such as the state of organic preservation in a site, species seasonality, and natural range also are involved.

Seasonality of the sample can be controlled, or determined, in many cases. This information, contained in or interpreted from site reports, is taken into account in the comparisons that follow. However, equation of semisubterranean houses to winter occupation does not hold completely. Moreover, VanStone and Townsend note the absence of traditional-type Tanaina Indian houses at Kijik (1970:152). The relatively late log structures there presumably could have been occupied at any time of the year.

Species distributions from the recent past can be equated to present distributions if allowance is made for minor shifts and for cyclic differences in the abundance of several species. Records are available pertaining to apparent caribou cycles. The cycles of several small mammals are of such short duration that it can be assumed that most houses were occupied through at least one cycle. Yet, untidiness upon leaving a house for the last time might reflect such cycles or a particular moment in time. For the present analysis sites have been used where several species were exploited in common. I have excluded those representing a mix of maritime and inland subsistence patterns inasmuch as they differ in radical and obvious ways from the Koyukuk and other interior locations.

Cultural factors may be the most difficult to control. I have previously discussed rules that pertain to the proper disposal of animal remains, but if these rules were followed with strict propriety there should be no faunal collections whatsoever from the dwellings from some groups. Loss through ingestion by dogs, butchering and meat processing procedures executed away from the camp, dietary preference, and accumulation of selected elements for reuse in manufactures are additional cultural factors. These factors tend to place faunal data from archaeological sites in a special class of their own -- i.e., in a class that must be compared with and interpreted within the framework of other such data sets. Only with prudence can they be interpreted in terms of human ecology. Positive data nevertheless do represent a certain reality and they may be fruitfully examined and compared from a number of viewpoints.

Data for a number of historic and late-prehistoric Alaskan sites and one site located in the Yukon Territory are presented in Table 6.4. Most of the original reports do not state whether the data are NISP (number of individual specimens; a single fragmented element can comprise more than one specimen) or MNE (minimum number of elements) though in most cases the data probably are NISP. In two cases MNI (minimum number of animals represented) are given to circumvent this problem. Certain statistics have been adjusted to make the data as comparable as possible. For example, isolated teeth, sesamoid bones, antler without attached bone, unidentified elements and test pit collections are discounted from original reports. Although the absolute abundance of remains is significant, the data have been converted to percentages in order to overcome differences arising from the magnitude of excavations which may vary from site to site.

Cultural Factors Affecting the Use of Animals and Faunal Recovery

A number of factors operating in Koyukuk culture may greatly influence the occurrence and condition of remains at a site.

Disposal of animal remains. The scarcity of faunal remains in the Kayak house is in accord with reported practices of disposal which were still followed in the 1970s (McFadyen Clark 1970). The greater number of bones at the other sites is more difficult to explain, but they possibly would have been picked up later and disposed of in the correct manner away from the settlement had the houses been reoccupied. It was a surprise to find bear bones in the houses since, with the exception of the skull, which was elevated on a tree, they were customarily burned. Moreover, bear bones should not have been given to dogs. Other bones were placed on high brush above ground out of the way of human activities if they came from land mammals, or returned to quiet water so they would not be carried away and regenerate elsewhere if the bones were from aquatic mammals like muskrat and beaver. There was little burned bone in the hearths, and today the Koyukuk people do not incinerate bones from fauna used for food. It was especially important not to let bones or flesh rot on the ground, and worse yet to let an animal rot in a trap. In the 1970s the practice of feeding bones to dogs did not strictly follow ideal rules, but all parts of the bones remaining were picked up later and disposed of in the proper manner. Wolf and wolverine carcasses usually were not brought into the settlement, nor were those of some other furbearers like mink, otter, marten and fox when they were not intended to be eaten. But small furbearers sometimes were brought in for the convenience of

TABLE 6.4. MAMMALIAN REMAINS FROM SELECTED SITES*

People	Coastal		Interior Eskimos						Northern Interior Eskimo			
Site	Nushagak		Akulivikchuk		Tikchik		Crow Village		Kangiguksuk		Siruk Cr.	
	No.	%	No.	%	No.	%	No.	%	MNI	%	No.	%
Caribou	37	56.1	260	66.3	186	67.1	21	25.0	149	82.3	-	-
Moose	4	6.1	20	5.1	41	14.8	20	23.8	1	0.6	-	-
Hare	3	4.6	-	-	-	-	9	10.7	14	7.7	683	85.4
Dog	9	13.6	55	14.0	21+	7.6	21+	25.0	-	-	-	-
Bears	-	-	3	0.8	-	-	-	-	-	-	4	0.5
Red Fox	-	-	5	1.3	-	-	3	3.6	7	3.9	-	-
Beaver	5	7.6	49	12.5	29	10.5	6	7.1	3	1.7	66	8.3
Muskrat	-	-	-	-	-	-	-	-	2	1.1	-	-
Marten	-	-	-	-	-	-	-	-	-	-	45	5.6
Wolverine	-	-	-	-	-	-	-	-	1	0.6	-	-
Lynx	-	-	-	-	-	-	-	-	-	-	-	-
Porcupine	-	-	-	-	-	-	-	-	1	0.6	-	-
Squirrel	-	-	-	-	-	-	4	4.8	-	-	1	0.1
Marmot	-	-	-	-	-	-	-	-	-	-	-	-
Dall Sheep	-	-	-	-	-	-	-	-	3	1.7	-	-
Total	66#	100.1	392	100.0	277	100.0	54	100.0	181	100.1	799	99.9
Occurrence	4 houses		7 houses		10 houses		4 houses		1 house		1 house	
Source	VanStone 1972		VanStone 1970		VanStone 1968		VanStone & Oswalt 1967		Hall 1971 minimum individuals		Morlan 1967	

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* Exclusive of unidentified specimens; exclusive of teeth (various sites including Kangigsuk for which publ. data include teeth); exclusive of sesamoid bones (esp. Nenana Gorge).

+ More or less complete skeletons are counted as one only.

# Also present at Nushagak and accounted for in the totals are 8(12.1%) beluga whale elements.

People	Interior Athapaskan Indian													
Site	Kijik		Nenana Gorge Prehistoric		Cadzow L. 1933 layer		Cadzow L. 1870-1890		Lake Creek		Okak		Dakah De'nin N2	
	No.	%	No.	%	No.	%	No.	%	NISP	%	NISP	%	MNI	%
Caribou	66	39.0	158	37.9	656	63.7	2096	93.8	3	6.4	-	-	-	-
Moose	2	1.2	17	4.1	24	2.3	3	0.1	3	6.4	64	47.1	-	-
Hare	64	37.9	10	2.4	47	4.6	43	1.9	13	27.7	58	42.7	10	27.8
Dog	20	11.8	-	-	-	-	-	-	-	-	-	-	-	-
Bears	1	0.6	3	0.7	1	0.1	-	-	23	48.9	8	5.9	2	5.6
Red fox	1	0.6	-	-	-	-	-	-	2	4.3	1	0.7	-	-
Beaver	13	7.7	-	-	63	6.1	38	1.7	-	-	1	0.7	2	5.6
Muskrat	-	-	-	-	235	22.8	52	2.3	1	2.1	-	-	-	-
Marten	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wolverine	2	1.2	-	-	-	-	-	-	-	-	-	-	-	-
Wolf	-	-	-	-	-	-	-	-	-	-	-	-	1	2.8
Lynx	-	-	-	-	-	-	-	-	-	-	1	0.7	1	2.8
Porcupine	-	-	-	-	-	-	-	-	2	4.3	2	1.5	6	16.7
G. Squirrel	-	-	38	9.1	4	0.4	-	-	-	-	-	-	14	38.9
Marmot	-	-	3	0.7	-	-	?2	0.1	-	-	1	0.7	N3	NA
Dall Sheep	-	-	188	45.1	-	-	-	-	-	-	-	-	-	-
Total	169		417	100.0	1030	100.0	2234	99.9	47	100.1	136	100.0	36	99.6
Location	19 houses		Camp area		Spring camp		Spring camp		1 house		1 house		1 house	
Source	VanStone & Townsend 1970		Plaskett 1978:125 adjusted		Morlan 1972		Morlan 1972		Present report		Present report		Shinkwin 1979	

skinning them at home. Unwanted carcasses were placed above the ground, on brush. Wolf and probably also wolverine were burned after ritual dismemberment. Although lynx was an important ritual animal and was given a party, it could be eaten at home, but only by the men.

In some cases recovery, or lack thereof, of faunal remains from the Koyukuk River houses fits these rules and practices, but there are exceptions. A case in point involves the bear bones which are present where they do not belong. It appears that reality and the cultural norm were as disparate five or six generations in the past as they were in the 1970s. Some of the options to the ideal vs. real concept are that shamans lived in the houses or they belonged to Inupiat, but these do not exhaust the possibilities of who the inhabitants may have been.

Keeping Dogs in Houses. Earlier, two kinds of evidence for dogs in houses was discussed: chewed bones and feces. As previously discussed, in late prehistoric as well as in the early contact period, a few Koyukuk couples without children and some elders kept dogs in the houses. Most families kept dogs in the tunnel entrances to warn the occupants if strangers approached, and one's special dog was almost always kept there. These former practices aid in explaining the archaeologic evidence of dog-chewed bones and feces that would be inexplicable in terms of contemporary practice. In the 1970s, sled dogs usually were not brought into or near a house, except rarely when in the winter a bitch with puppies was brought in.

Dog remains found in several Alaskan sites are perplexing in some cases, although well documented. Butchered and sometimes burned dog bones are common in prehistoric Eskimo midden deposits of western and southern Alaska, where domestic canids appear to have entered the diet of both other dogs and humans. Finds of dog bones in many house floor deposits, Koyukuk River houses excepted, suggest a close relationship between dogs and people during the contact or early historic period, unless particular abandonment behaviour accounts for dog remains in house ruins.

Dog-chewed bones are common in Yupik middens of south-central Alaska, but Oswalt and Van Stone (1967:70) especially remark on the absence of such chewed bones at Crow Village. It is known, nevertheless, through the recovery of dog bones, that these animals were present at Crow Village. The authors cite local traditional knowledge which maintained that bones were dumped into the water to prevent dogs from getting them and thus offending the species. Other excavation reports for southwestern Alaska fail to remark on either dog feces or dog-chewed bones and it can only be assumed that these were not recovered or were not prominent. The Koyukuk Indians, like their Yupik counter-parts, may have been somewhat exceptional in their dog-keeping habits.

Cooking and Food Preparation. When the Russians arrived in Nulato people obtained copper pots with riveted-on bottoms. There are also reports of Russian cast iron pots. Before then, cooking in receptacles was done in pottery *klatz-oo-tlok* and in birchbark baskets. Coals were spread around the pot which was placed next to the fire, and baskets were hung about one foot above the fire. Fresh meat, fish, and sometimes fowl also were roasted on skewer sticks stuck into the ground next to the fire. In addition, some dried and frozen foods were eaten uncooked. No special beverages were made, but meat broth *talik* and water were drunk, and dishes such as one mixed from tallow, berries and whitefish -- a variation of "Eskimo ice cream" -- were made on occasion. Some families cooked separately, even if they lived in the same house; and in other cases, cooking would alternate between family wives. Sometimes men cooked. Usually relatives, such as a senior family and a daughter's family, or "one company" ate together.

Virtually all mammals, excepting wolf, dog, probably wolverine and some of the smallest ones were eaten, although some were considered to be primarily fur-bearers. Except in times of near starvation, most people did not eat the mustelids, marten, mink and otter, because they do not taste good. Certain parts of bear, the most prominent ceremonial animal, had to be cooked and preferably eaten away from the settlement by men only. The parts especially reserved for "bear parties" held away from the settlement were the neck, brisket, head and feet, plus the heart which might be given to older men to eat. Lynx, an animal given lesser ceremonial distinction, could be cooked in the house, but there were restrictions on who could eat it. For all bones there were disposal rules, as have been noted. Caribou and moose bones were cracked for the marrow grease which was picked and boiled out of them. One person recalled that the best food he had when he was young was marrow. If a quarter of meat was given away, the bones were stripped and returned to the giver so that he could obtain the marrow. A further reason for splitting certain bones was to make tools. For example, beamers were made from caribou or moose metapodia, arrow heads from caribou leg bone, and spear points from bear ulnae or radii.

Natural Distributions

Sites compared in Table 6.4 have been selected primarily on the basis of shared natural distributions of mammalian fauna to preclude reflection of regional differences in available game. Nonetheless, some natural inequalities still exist. These are discussed below.

From gross distribution maps (Manville and Young 1965), it is inferred that Dall sheep are most likely to be found in the Healy Canyon and Kijik sites, and to a lesser extent at the Noatak (Kangiguksuk), Siruk and Okak sites. Athapaskans and Inupiat living in the vicinity of the last two sites reportedly made trips to the Brooks Range to hunt Dall sheep. Archaeological distribution partially fits these expectations. The Noatak River valley, excepting areas near its mouth, is marginal to several mammals, including snowshoe hare, arctic hare, muskrat, marten and beaver. Nevertheless, some muskrat and beaver bones were found in the Kangiguksuk site and snowshoe hare is abundant (Hall 1971). The site actually is located within the range of these species (Edwin Hall, oral communication 1978), although distribution maps do not show this conclusively. Snowshoe hare are absent in the Nushagak area (Nushagak, Tickchik and Akulivikchuk sites). Significantly, only three "rabbit" bones were found at Nushagak and none at the other two sites. Lynx would not be expected at the same sites, or at Crow Village, on the basis of their natural range. Archaeological evidence supports this concept.

Seasonality. Seasonality relates to the fact that more emphasis is of necessity placed on taking certain animals during a particular part of the year due to seasonal changes in the range of a species, or to other natural factors such as quality of furs. Natural factors interplay with cultural factors, for example when hunting and trapping techniques or storage and preservation require conditions peculiar to a particular season. The time of the year that sites were occupied and the resources exploited, reflects the seasonality of the resources. Conditions peculiar to certain sites used in this analysis illustrated in Table 6.4 are discussed below.

Multiseason sites can be expected to have flatter and broader species spectra than single season sites. This situation is illustrated to a certain extent, in its single season aspect, at the Nenana Gorge site by the high incidence of caribou and mountain sheep, together with some moose. The topography of the site area appears to have excluded hunting or trapping of fur-bearing animals associated with aquatic habitats. Cadzow Lake was occupied in May 1933 for caribou hunting, after muskrat trapping at another camp did not meet expectations (Morlan 1972). The caribou hunt appears to have been successful, but muskrat trapping evidently continued. But, one might question, whether some of the muskrat, which is considered highly edible, were not brought in from the previous camp. The function of this site, preeminently for hunting caribou, is especially reflected in an earlier component of about 1870-1890 at the same location.

The remaining sites are partially or largely cold season sites. This season is associated with trapping fur-bearing animals, although some furbearers, especially muskrat and beaver, are trapped or shot in the spring. Beaver also are taken in the late autumn, thus exploitation of these two species is not completely parallel. Conversely, ground squirrels and marmot were taken during the late spring and summer. Furbearers are not to be associated exclusively with trapping or the contact period trapping economy, inasmuch as certain species are important meat animals. These particularly include beaver, muskrat and in some areas ground squirrels, while lynx and marmot made lesser contributions to the diet.

VanStone and his collaborators have commented on the low incidence of furbearers in their faunal samples. The primary explanations they offer are respect practices and processing of the catch at trap camps. If, however, we consider that in most cases, e.g., for all faunal recovery, we are dealing with the recovery of remains that slip by the respect observations or with exceptional circumstances of nonconforming behavior, we would expect to find at least a proportionately good representation of the common edible furbearers, muskrat and beaver. Beaver is in fact moderately represented at a number of sites, but muskrat is rare or totally absent. This distribution might indicate that people had left their winter dwellings for "rat" or spring camp, and did not return until much later after muskrats saved for food had been eaten. There are two seasons each for beaver and caribou, essentially autumn and spring, and in some areas both can be taken over the greater part of the year. Although caribou hunting and beaver trapping are dissimilar activities, closeness of the hunting and trapping seasons and presence of beaver within the caribou winter range lead one to expect that remains of these two animals are likely to be found together in parts of the interior forest region. Similarly, bear were sought late in the autumn after they had gone into hibernation and in the spring after they had come out of hibernation, although they also were killed at other times. Their remains are abundant at only one site.

Cycles of Abundance. Recent caribou cycles are well documented, while moose are subject to marked changes in abundance and range over long periods. The modicum of moose found in nearly every site appears to run counter to traditions that there were no moose in the greater region at the beginning of the present century. Evidently there was not a complete absence of moose in most areas. Alone, the moose data may not indicate the level of natural abundance, but they are of special interest when compared with the usually prolific caribou.

The low incidence of caribou in the Koyukuk drainage sites mtches a time when they had nearly disappeared from the area. Sites located along and near the Nushagak and Kuskokwim River belong to essentially the same period, but possibly the crash of the caribou herds there was not as extreme as it was in northwestern Alaska. There is some uncertainty about the age of the Siruk Site on the Alatna River. Whether or not it precedes the crash or was occupied at the beginning of that period is unknown. Crow Village may reflect the decrease of caribou, although percentages for this site are depressed by an unusual abundance of dog bones. Kijik proportions also are unrealistically depressed by dog and abundant hare elements. If usable meat calculations were made, caribou would rise to greater prominence at Crow Village and Kijik, but moose would remain the most important species at the former. To summarize: the Koyukuk sites of Siruk, Okak, and Lake Creek have almost no caribou, at Crow Village caribou and moose are numerically co-dominant, and in all other sites caribou is the most prominent animal. These differences are at least in part due to cycles.

Patterns

The thirteen sites compared appear, upon first examination, to present an unpatterned mass of data. Correlations with the geographic distribution of mammals, their cycles of abundance and season of site occupation are apparent. Tentatively, the following patterns can be suggested:

1. Caribou Crash (Winter, caribou failed; Koyukuk houses).

   Moose
   Bear (primarily black bear, some brown bear)
   Hare (here and elsewhere almost exclusively snowshoe hare)
   Minor porcupine
   Occasional mandible, teeth or other bone from furbearers

2. Spring Caribou Hunt (Spring; Cadzow Lake)(Morlan 1972).

   Overwhelmingly caribou
   Muskrat
   Beaver
   Hare

3. Mountain Area Camp (present sample lacks single season definition;
   Nenana Gorge)(Plaskett 1977).

Dall mountain sheep
Caribou
Moose
Arctic round squirrel *Citellus*
Hare

4. Idiosyncratic (trapping; Siruk Creek)(Morlan 1967).

Hare
Beaver
Marten

5. Generalized Interior Basecamp (Cold season; Kangiguksuk, southwest Alaska sites)(Hall 1971; VanStone 1970, 1972).

Caribou
Moose
Dog (dietary in SW Alaska variant)
Hare (largely absent in SW Alaska)
Beaver
Occasional mandible, tooth, other element from furbearers.

6. Salmon Fishery (Dakah De'nin village on Copper River)(Shinkwin 1979)

Salmon (120 MNI House 2, compare with 36 MNI all mamals most smaller than salmon)
Hare
Arctic ground squirrel
Porcupine
Rare black bear, beaver, marmot, lynx, wolf

Other patterns are likely to be found.

In this chapter we have examined in detail the collections, consisting of artifacts, houses, and other remains, in order to establish their places and relationships in the larger universe of Native cultures in western and interior Alaska and the Yukon with that of European or white traders. We can now apply this specialized knowledge, together with certain information presented in earlier chapters, such as the type and floor distribution of remains, to the broader questions addressed by this study.

CHAPTER 7
SUMMARY, DISCUSSION AND CONCLUSIONS

Who Lived in This House? is an ethnoarchaeologic study of three middle to late nineteenth century semisubterranean houses located in three small winter village sites near the Arctic Circle in an Athapaskan/Inupiat interface region along the Koyukuk River in Alaska. Investigation of the houses has its genesis in the housing survey section of an earlier study entitled **Koyukuk River Culture** (McFadyen Clark 1974).

In previous chapters we have seen that the primary foci of the present study, which uses ethnographic models that center on winter housing and paying respect to animal spirits to interpret the results, were: (1) house construction; (2) analysis of contents and comparison of their locations on the living floors; (3) human behaviors attendant to construction, occupation and utilization of space within the houses, and (4) comparison of Koyukuk houses and their contents with those from other sites in Alaska and the Yukon.

A secondary issue that has continued to pique my interest is whether or not it is possible to determine the ethnicity of occupants of houses in interface regions when minor differences exist between the resident groups in their practices of paying respect to animal spirits. The primary issues have been discussed in the preceding chapters, while that of ethnic identity of the occupants will be touched upon briefly later in this chapter.

Summary and Discussion

Summary of Findings

The three houses that were excavated and several others that were tested conform closely to the central hearth, dual ridgepole, four-center-post type of construction with tunnel entrances and birchbark roofs described in Chapter 4 and shown as reconstructions in Figures 4.2 and 4.3 and in the more detailed plans in Figures 4.4, 4.16 - 4.26 and Table 4.1. Each was approximately five meters square and was excavated to a depth of from 65 to 80 centimeters to form the main room. Variations from the general plan were the use of a second set of front center support posts which may have served primarily to support one end of the entry or possibly as partial room dividers, and in the Okak house a more complex floor plan which included a small rear room.

It is interesting to note that in each of the three houses the Euro-American imported artifacts far outnumbered those of indigenous manufacture as shown in Table 5.1. However, perusal of the faunal data presented in Table 5.5 shows major differences in the types and quantities of faunal remains from the several houses. These may reflect both seasonality and abundance of game during the period(s) of occupation; variations in diet and housekeeping practices, perhaps due to the sex, age or physical condition of the residents, or differences in paying respect to game. For example, there is good evidence that many of the residents of the Lake Creek region, and probably the Lake Creek house, had strong medicine power. If this is true, it might well account for the rather large number of faunal remains, especially the black and grizzly bear bones, found on the living floor of that site, because both medicine women and men were exempt from following the ideal prescribed patterns of the culture.

In an attempt to better understand human interactions and activities within the houses, after the objects and faunal remains were analyzed they were plotted on their respective floor plans then against my stylized space utilization plan (Fig. 5.4). Composite distributions of artifacts from the three houses (Fig. 5.8 - 5.10), exclusive of beads, show distinct patterning, although for most categories they are not highly definitive and only partially corroborate the utilization of space described by the elders. However, the composite plots of male vs female objects illustrated in Figures 5.11 and 5.12 show a reasonably good fit with the stylized plan in Figure 5.4.

Bone distribution patterns were primarily ones of dispersal, with the exception of that of bear, and may have resulted from removal of bedrolls during housekeeping activities. Distribution of bear bones is of especial significance, because under ideal conditions none would be found in Athapaskan dwellings with premenopausal women in residence, but they were found in all three houses. Hide scrapers also were found in each one, thus suggesting that women were in residence. Evaluation of the plots shows that most of the bear bones were located in areas that were used by men or old people. The single lynx scapula from Okak recovered from the "womens area" is significant, if indeed this is where it was discarded after eating. Lynx was a powerful ceremonial animal, and in early times it was never taken into a house when women were present, thus suggesting that the residents were either not traditional Koyukon Athapaskans or the women were away.

Gaps in information on housekeeping practices make it exceedingly difficult to evaluate the relevance of distribution of remains on living floors. Some of these, such as (a) were the floors completely covered with spruce boughs before the skins were laid down; (b) did the boughs take the place of flooring and individual skins placed over them only when they were required to sit or sleep on; (c) if the latter were the case, were the skins rolled up and placed out of the way after use; and (d) when the skins were taken out to be cleaned, were they removed through the smoke hole or through the tunnel entrance? Answers to simple questions such as these would go far toward providing a more firm basis for evaluating space utilization from archaeologic remains and provide us with a better understanding of how the distributions were made.

When the analysis of the three Koyukuk River houses was complete, the results were compared with similar information from other areas in Alaska and the Yukon. The sample universe includes sites from the Yukon River Koyukon; Ingalik; Kutchin; Han; Tanana; Tukuto Lake, Type 2; Late, Middle and Early Kobuk River; Atna and Nushagak River. The results from comparison of house types, illustrated in Figure 6.1, show clearly that the Koyukuk River houses share more traits in common with late prehistoric Kobuk houses than with any others in the survey. Comparison of the trade beads from the several houses is presented in Figure 6.2. Because of the wide variation in other types of objects excavated from the houses, comparisons are not presented in tabular form; but instead those from the middle Koyukuk houses are compared individually with those from the other sites in Alaska and the Yukon as discussed in Chapter 6. Variation in the types of trade goods excavated from the houses in the several regions is probably not a factor of distance from early Russian, British or American trading posts. Indigenous trade, both local and regional, as well as intercontinental, had long flourished in the north before white contact, and it was precisely for the purpose of cutting off native trade with Siberia that Zagoskin was sent to explore the Yukon River and set up trading posts there (Zagoskin 1967; McClellan 1950; McFadyen Clark 1974). The presence or absence of certain types of trade objects found in the houses may reflect the differences in the time of use and abandonment of the houses, the value placed on the objects by their owners, or on housekeeping practices, instead of reflecting variations in their proximity to trading posts. When the contents include faunal remains, differences in belief, especially those that center on paying respect to animal spirits, must also be considered.

Discussion

As we have seen in the attribute analysis of selected Athapaskan and Eskimo houses in Alaska and the Yukon presented in Table 6.1, the traditional Koyukuk River houses share more traits in common with late prehistoric Kobuk houses than with any of the others in the survey. Unfortunately, no earlier houses on the Koyukuk have been reported, except the 5-6th century AD Ipiutak-related ones at Hahanuden Lake for which direct continuity with later protocontact houses has not been demonstrated. Therefore, it is easy to hypothesize that either: (a) Koyukuk Athapaskan houses were derived from Kobuk River Inupiat houses about 200 years ago, or (b) Koyukuk and Kobuk houses are convergent or parallel developments from a commonly shared antecedent that existed in both areas. Until the very major gaps in the Koyukuk River continuum are filled and additional information on prehistoric Koyukuk River houses becomes available, final decision on local origin must be held in abeyance.

In an eight-stage sequence for the Koyukuk drainage, inclusive of the contact period, outlined by D. Clark (1974a), the most recent of the prehistoric lithic assemblages, the Lake 324 complex, is dated tentatively to 1100 AD. The Vic Rock Shelter in the northern Koyukuk drainage appears to be more recent, but definitive artifacts there are limited to a bone point fragment and pieces of a birchbark tray basket (Cook, ed., 1977:678-698). Except for scattered finds or minor sites with ceramics, small stemmed points, a grinding slab, a small hide-scraping stone and a grooved adze, the last 700 years of the full prehistoric period remain an enigma. It is therefore as yet impossible to tie the contact period Koyukuk River Koyukon directly to their immediate predecessors.

In the Lake 324 complex, the only implements suggestive of second millennium AD cultures, as have been found elsewhere in Alaska and the Yukon Territory, are hide-scraping stones and a grooved pestle. Even these artifacts are not unequivocally part of the Lake 324 complex, which consists primarily of obsidian implements, because they were found on the surface of the shallow site. In order to recognize a contact period phase of assumed transitional nature, one must know the contents of the antecedent prehistoric phase. Thus the concern here is not simply historiographic; it is vital to the understanding of the sites that were excavated. Even though the data are incomplete, one may safely speculate that lithic, bone and other implements of traditional form that have been documented during the contact period also were used by the immediate antecedents of the Koyukuk Koyukon during the late prehistoric period. Many items known from adjacent regions, e.g. on the Yukon River (de

Laguna 1947), undoubtedly also were used by residents of the Koyukuk.

In the collections excavated from the three houses that are the focus of this study, exclusive of items manufactured from imported material, native-produced artifacts are limited to the following:

house structures
hide scraping stones
natural red pigment (red paint) stone
red pigment mixing basin
natural whetstone
battered chert (for strike-a-light?)
snowshoe netting needle with central hole
wooden skewer sticks
birchbark tray baskets.

This list does not meet the expectations of a fuller more definitive earlier complex. One must not rule out, however, the possibility that other implements of both bone and stone were not being made at this time, because almost everything these sub-Arctic people made and used was portable and items that were still useful may have been packed and taken with them when they left the houses. But, by the time these houses were occupied, the Koyukuk people had access to a relatively wide range of goods from non-indigenous traders located on the Yukon and along the coast. Both British and American traders had arrived, and with them the variety of goods available increased markedly over that which had been offered by the Russian American Company. Occupation of the Kayak, Lake Creek and Okak houses was too late to document the technological conjunction of history and prehistory. Many indigenous implements already had been replaced by imports or were being made from imported material. To accurately document conjunction, evidence from houses two or three decades earlier than those reported here is required.

De Laguna's Kateel site along the lower Koyukuk River more nearly meets this requirement (de Laguna 1947:51). In addition to items listed above, she also found there:

large sandstone grinding slab
stone pottery smoothers
ceramic vessel fragments
antler wedge
antler comb
slender barbed arrow point (for beaver)
slender unbarbed arrow point

These items were missing from the upriver inventory and appear to belong to an earlier stage. This assumption is in keeping with their earlier age which may be more or less coeval with Zagoskin's visit to Kateel in 1842. However, it is not known exactly when the houses excavated by de Laguna were abandoned. Occupation there spanned several decades, with possible *in situ* rebuilding of houses. The old village was not completely abandoned until the river changed its course during the American period and its residents moved to the newly formed mouth of the Kateel River where Allen met them in 1885.

Still missing from the inventory of indigenous continuities are various styles of flaked and ground stone knives, stone and bone scrapers, gouges, adzes, tooth or bone drills, spear heads and others, to mention only the least perishable items, all of which Koyukuk River consultants described to me during the oral tradition phase of the study. The lack of these items at Kateel may indicate the state of technological acculturation, but it may also be the result of small sample size or removal as mentioned previously. Before our knowledge of the Koyukuk continuum is complete, excavation and analysis of materials from late prehistoric sites, as well as additional ones from the terminal Russian period through the goldrush, must be conducted.

Who Lived in this House?

The semisubterranean houses in the Allakaket region of the Koyukuk became increasingly interesting to me when I learned that there was a long history of contact and interaction between the Athapaskans of the Koyukuk and the Kobuk Inupiat. But, how long this situation had existed is unknown. At the time of the gold rush both Athapaskans and Inupiat were living side-by-side at Allakaket. Earlier, both ethnic groups had inhabited the upper Koyukuk and Alatna River regions and the Koyukuk Koyukon also had lived in part of the upper Kobuk drainage along the Pah River, thus from at least the early 1800s there was virtually no physical distance between these two ethnic groups. Further, as we have seen in this study, both lived in almost identical semisubterranean houses with tunnel entrances.

The Lake Creek, Kayak and Okak sites are within less than a day's walk of one another, thus individual micro-environments are not an issue. Two of these house sites, Lake Creek and Kayak, were known to local elders, but they were unaware of the existence of the Okak site until the year it was excavated.

Lake Creek, the site the local people knew best, is the one that I think is the winter component of Allen's "Kenootena," the place where white explorers and traders first made direct contact with the Koyukon of the middle Koyukuk region in their home territory in 1884 and 1885. Oral tradition cited in Appendix 2 and the genealogy in Figure 3.3 suggest that this site was occupied by descendants of the Koyukon shaman, *Beyet K'ets'Ehool'onee*, the well-known "Big Boss" of the largest caribou fence in Koyukuk territory. Because of the strong medicine power associated with former shamans, some local residents were reluctant to discuss the inhabitants of this site. However, all persons with whom I discussed it were certain that the occupants had been Athapaskan.

Local residents had all but forgotten the existence of the Kayak site, located almost directly across the river from the present-day village of Allakaket. Similarly, they were uncertain who its occupants had been, but they believed that they also had been Athapaskans. Both Athapaskan and Inupiat consultants offered several possibilities that are discussed in Appendix 2 and illustrated by the genealogies in Figures 3.4 and 3.5. Inasmuch as Allen saw an abandoned house in the same general location as the Kayak site when he explored the Koyukuk in 1885, it is more likely that the initial residents of the Kayak site were *Hotoyenee* and her family, as illustrated in Figure 3.4. Because of the time frame, it is also quite probable that Henzie and his sister (Fig.3.5) may have lived temporarily in the Kayak house after moving up river while they built another dwelling. Some members of Hotoyenee's family, like the *Beyet K'ets'Ehool'onee* family, are known to have been important shamans, but to my knowledge Henzie and his sister, Julia, were not. If, indeed, they were the final residents of the Kayak house, the fact that Julia was not a shaman could explain why there were so few faunal remains left in this house.

There are other semisubterranean houses close to Allakaket that local residents were not familiar with. Lack of knowledge of these, however, was not unexpected. Most of the Athapaskan and Inupiat elders who had lived in the region before contact had died before I began working on the Koyukuk. Some of these were from families who had moved to the Allakaket region to marry, the ancestors of yet others were people who had moved up river after the Nulato Massacre, while others, particularly many Inupiat, lived along the Koyukuk during the gold rush and later moved to the village of Beaver on the Yukon.

The existence of the Okak house was unknown to local residents until J.E. came upon it in his woodyard after the house study had been initiated. After the house was located, questioning local residents did not elicit a response similar to that for the Kayak house. No one in the area had any idea about who its residents may have been, but some suggested the possibility that it could have been built by Inupiat because it was located in an area that had traditionally been used by them, especially for summer fish camps. As mentioned earlier, if it was of Inupiat origin, it may have belonged to one of the families who moved to Beaver after the gold rush. Inasmuch as oral tradition did not provide sufficient evidence to pinpoint the ethnicity of the occupants of the houses in the sample, it thus became a challenge to find a mechanism for differentiating Athapaskan housing from that of the Inupiat. If it proved possible to make such a determination, information of this type would be invaluable for use in studying inhabitants of other interface regions.

At the time this work was initiated, I was unaware of just how similar much of the material culture of these two ethnic groups was and how difficult, if not impossible, it would be to determine which houses were inhabited by Athapaskans and which by Inupiat (McFadyen Clark 1974).

Within the limitations of incomplete ethnographic data for the Inupiat on the Koyukuk, the major difference between the two groups of which I was aware, other than the obvious one of language, was in the treatment of faunal remains as outlined in Chapter 1 and further discussed in Chapters 4 and 5. As we have seen, traditional Koyukon rules for propitiation of animal spirits precluded leaving any type of faunal remain on the floor of a dwelling following a meal, and if bear or lynx bones were left on the floor the houses could not have belonged to traditional Koyukon Athapaskans unless, of course, no women were in residence. With few exceptions, Koyukon also did not keep dogs in their houses. If the local Koyukon did indeed follow the prescriptions for propitiation of animal spirits, all of the houses in this study by default would have been those of Inupiat. Each contained womens' implements and each contained faunal remains, including bear; and in the Okak house a lynx bone was found in the women's area. Similarly, dog corprolites were found in each house. Does this suggest that the Koyukuk did not follow prescribed cultural rules or indeed were some of the residents Inupiat? Oral tradition suggests several explanations (McFadyen Clark 1970a).

Shamans

Koyukuk oral tradition suggests that shamans, both male and female, were exempt from following prescribed cultural rules, i.e., they were part of a privileged elite that was an integral part of Koyukuk culture but in no way bound by its prescriptions. They were almost always the most wealthy members of the group, married whom ever they pleased both within and outside their own sib, followed no food restrictions and overlooked the power of animal spirits. If female residents of the several houses in question were shamans one, might then expect to find bear, lynx and other bones, in the houses. Even dog corprolites would not be out of place if the women shamans liked dogs. Further, if we were to consider the comment made frequently by Koyukuk elders that "everybody was a little bit shaman," and give it full shamanistic connotation, we could readily state with impunity that all houses in the study were inhabited by Athapaskans. However, being "a little bit shaman" did not imply that those who were not really shamans had full shamanistic power with cultural exemptions; it meant that sometimes things came to them in their dreams to warn them of impending danger or they might be able to perform simple cures, etc. It did not give them especial cultural license.

Elders without Children

During the winter when subarctic residents went on the hunt, the Koyukuk Koyukon as well as the local Inupiat almost always left old people and the infirm behind because they would impede travel and would not be able to contribute to subsistence activities. There were no food restrictions for old men from either ethnic group and all Athapaskan as well as Inupiat women past menopause were exempt from bear taboos. Similarly, oral tradition from each group suggests that elders frequently kept a dog in their house as a substitute for children or to warn them of danger. If the residents of these houses fitted the elder category, they could have been from either group.

Males Only

Only infrequently did males from either ethnic group live together without other family members in residence, except in times of emergency during epidemics when many members of small groups died, or when they went out on the fall hunt. This scenario does not appear to fit the Koyukuk house residents, especially because each contained womens' implements in their proper place in the womens' sections of the houses.

Nontraditional Athapaskans

Oral tradition suggests that some members of society neglected to follow certain prescribed cultural rules, not because they were shamans, but because they did not feel bound to follow rules they did not consider practicable. Perhaps they were the avant garde of their day. All such examples related to me dealt with improper marriages among individuals within the same sib, i.e., endogamous instead of exogamous marriages, or with instances that dealt with renegades who were either too lazy or too "stupid" to follow Koyukuk rules. None of the examples related to me made reference to neglect of propitiation of animal spirits and thus may not be relevant to this thesis. However, being nontraditional does not rule out keeping a dog in the house.

Contact Traditional Athapaskans

All three houses were inhabited after the Yukon River Koyukon had experienced several decades of direct contact with Russian traders and explorers and many had been exposed to or had embraced Russian orthodoxy. As we have seen in Chapter 6, some Koyukuk River people traded on the Yukon. Their oral tradition suggests that they knew that the Russian lifeways were different from their own and those of the Inupiat and that they lived by a completely different set of rules. Perhaps the inhabitants of the several houses were already beginning to question some of their traditional beliefs (Helm et al 1975).

Poor Housekeepers

Elderly consultants whose parents had lived in semisubterranean houses repeatedly mentioned the difficulty of keeping the houses clean, and they stressed the importance of shaking out the bed rolls and refurbishing the spruce-bough floors. Their rational in doing so was to keep them fresh "so they don't stink too much." This, then would include removing dog corprolites. According to them if you did not keep your house clean, evil spirits might try to come in and hurt you or tear your house up.

Certainly poor housekeeping cannot account for the bones found on the living floors of these houses. Conversely, to have kept the floors of these poorly lighted dwellings as clean as they were found during excavation, their residents would of necessity have been meticulous housekeepers.

Time of Deprivation

All sources of information, including oral tradition and explorers reports from the time of Zagoskin through those of Allen and Stoney, as well as reports from geologists such as Mendenhall, Schrader, et al, show that the period between 1833 through the early days of the gold rush was exceedingly difficult for residents of the Koyukuk River. It was not only the period of direct contact, it also was a time of small pox epidemics, measles, and influenza so severe that entire families and in some cases villages of people died because they had no natural immunity to these newly introduced diseases. Later, some Koyukon changed their places of residence especially after the Nulato Massacre in 1851 to avoid reprisal, thus placing greater stress on their marginal resources. Concomitant with movements of people, there was a scarcity of game, especially from the 1870s on when the caribou herds crashed and the survivors changed their range. When the caribou left the Noatak and Kobuk regions, more Inupiat began to hunt in the Koyukuk drainage as well as in adjacent areas to the east.

When a people are undergoing extreme societal stress from external sources and at the same time are faced with a marginal food supply such as they were facing during the period under consideration, I doubt that following cultural rules take precedence over survival. It is at times like these that ideals are overlooked and survival becomes paramount. Senior Inupiat consultants related incidents from the 1930s and 1940s that centered on having to go far afield to hunt for bear to feed their families when game was scarce, and they pointed out that there were times when if there had been no bears they would have died. Similarly, one Athapaskan woman (LS) told me about a time during the 1930s when there was no game of any kind in the region where they camping. The most frail began to die, while the strongest survived by eating small fur bearers and blackfish.

Further speculation about the residents of these houses will not provide us with their names or ethnicity. The boundaries are variable and we cannot be sure of what the evidence indicates. There are also too many practical unknowns. For example: What proportion of each carcase used for food was taken into the house? How much of that which was taken in was deliberately removed vs. that which fell through the cracks and was unintentionally overlooked during housecleaning? Both the small size of the house sample and the short time period covered by this study limit our knowledge of what conditions may have been prevailed during periods when less stress was involved.

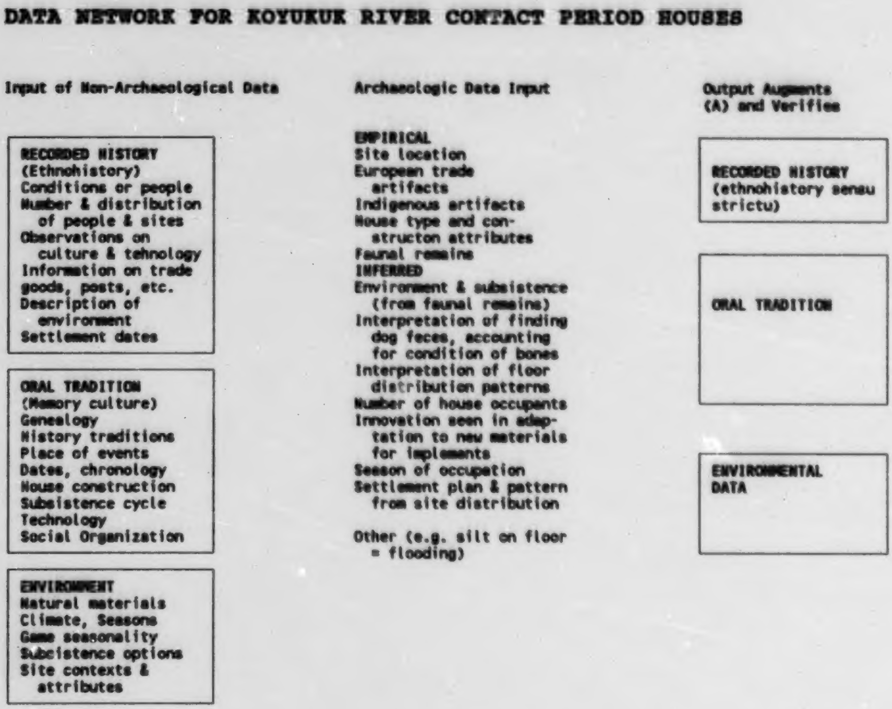
Even though no definite conclusion has been reached concerning the ethnicity of the occupants of the Okak house vs. that of those who lived at Lake Creek and Kayak, there were observable differences between Okak and the other two. The use of propitiation of animal spirits and disposal of faunal remains as a model to test whether or not occupants of the several houses may have been from two different ethnic groups has not been eliminated as a practicable one for making such differentiations. In the present study there are still too many gaps in my information about Inupiat belief to adequately test this model. If a similar or related model based on ideology were tested on ethnic groups from whom more conclusive differences existed, the results might be far different from those for the present study.

Approach and Methods

The approach and methods used in this study parallel those I have used previously in research among Subarctic Athapaskans, i.e., an ethnoarchaeologic approach to interpret human behavior in an archaeologic context. Models for interpreting behavior were drawn from my own observations and ethnographic research among the contemporary Koyukuk River Koyukon and Inupiat residents, and the methods used to obtain the information upon which the present study is based are collection of traditional oral ethnography, archaeologic survey and excavation, and review of ethnohistoric documentation, i.e., ethnohistory, sensu stricto. Information derived from each source is important in its own right, although each has its limitations, but together they both supplement and complement one another and provide greater insight and understanding of traditional lifeways. Now let us review and discuss the relative efficacy of the several major methods used.

The combined use of oral tradition, ethnohistory, and how archaeology either verifies or disproves and also feeds new data into the pool of historical and traditional knowledge is diagrammed in Figures 7.1 and 7.2. Knowledge of the environment further contributes to an understanding of the archaeological context and data; and, in turn, environmental data can be recovered through archaeological techniques.

Figure 7.1 shows the network of recorded, traditional and archaeologic knowledge. Logically viewed, new knowledge derived through archaeology cannot be assigned to categories specifying that this knowledge exists in written records or oral tradition; otherwise it would not be new knowledge.



DATA NETWORK FOR KOYUKUK RIVER CONTACT PERIOD HOUSES

Input of Non-Archaeological Data

RECORDED HISTORY
(Ethnohistory)
Conditions or people
Number & distribution of people & sites
Observations on culture & tehnology
Information on trade goods, posts, etc.
Description of environment
Settlement dates

ORAL TRADITION
(Memory culture)
Genealogy
History traditions
Place of events
Dates, chronology
House construction
Subsistence cycle
Technology
Social Organization

ENVIRONMENT
Natural materials
Climate, Seasons
Game seasonality
Subsistence options
Site contexts & attributes

Archaeologic Data Input

EMPIRICAL
Site location
European trade artifacts
Indigenous artifacts
House type and constructon attributes
Faunal remains
INFERRED
Environment & subsistence (from faunal remains)
Interpretation of finding dog feces, accounting for condition of bones
Interpretation of floor distribution patterns
Number of house occupants
Innovation seen in adaptation to new materials for implements
Season of occupation
Settlement plan & pattern from site distribution

Other (e.g. silt on floor = flooding)

Output Augments (A) and Verifies

RECORDED HISTORY
(ethnohistory sensu strictu)

ORAL TRADITION

ENVIRONMENTAL DATA

Fig. 7.1. Data Network For Koyukuk River Contact Period Houses.

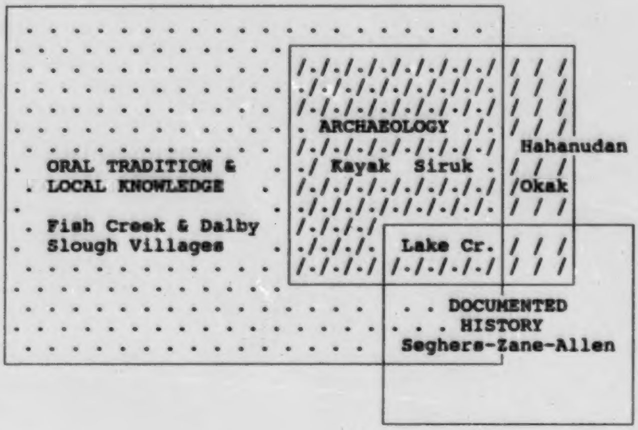


Fig. 7.2. Overlapping, complementary and supplementary domains of archaeology, history and oral tradition as they pertain to semisubterranean house sites. Some sites have not been seen by archaeologists and are known only through Local Knowledge (Dalby Slough villages); some are only known through archaeological investigations (Hahanudan Lake); some are known through both archaeology and Oral Tradition or Local Knowledge (Kayak, Siruk, Okak houses); and some are known through the three lines of Archaeology, Documented History and Local Knowledge and Traditions (Lake Creek house).

Therefore, categories of information, as diagrammed in Figure 7.1, are not completely coordinate. Archaeological data there judged from otherwise existing knowledge only provide verification and augmentation. Usually, a particular kind of information is not unique to one category, thus the data and methods used to obtain it are both supplementary and complementary. For example, when Allen visited Lake Creek, he did not specify the types of settlement structures he saw there, but from oral tradition I learned that there were semisubterranean house remains at this locality. Their precise location was shown to me by a Koyukuk elder, and through archaeology it has been possible to illustrate that the houses fit the expectations of an 1880s contact settlement. Figure 7.1 shows the flow of information to and, in part, from archaeology, but the actual network is multicomponential, entailing a flow of information between all three components diagrammed, as well as between ethnohistory, sensu stricto, and oral tradition.

The overlapping complementary contributions and the supplementary or unique contributions of archaeology, recorded history and oral tradition as shown in Fig. 7.2 may be visualized as three intersecting circles. When scaled proportionately, according to the number of sites represented in each class of information, the result, as shown in Figure 7.2, is suggestive of a Venn diagram.

In the case of semisubterranean house sites, for example, one finds that a large number of sites have been reported on the basis of oral tradition and local knowledge. Local knowledge that consists of relatively recent observations can be more precise than "memory culture type" oral traditions that may have been passed down through several generations, but here the two categories of information are not being separated but instead treated as a single entity. Such knowledge thus includes sites observed for which there are no local traditions, traditions about sites that have not been seen recently or for which observations are lacking, and traditions which can be assigned to a cluster of sites, but are applicable to only one within the group. For example, there is the case of the Okak houses which were discovered or rediscovered by a person from Alatna in 1968, for which by then there was no known traditional knowledge. Huslia residents reported housepits in the area of the Tlokleet settlement, destroyed by internecine feuding well over 100 years ago. In this case it is not know precisely which, if any, of these houses are reflected in the Tlokleet raid traditions. The Kayak site is one for which there are contradictory oral traditions about who its occupants may have been and when they lived there. Finally, there is the well-known Siruk site settlement on the Alatna River, with rich oral tradition about its occupants, that was excavated by Campbell and Morlan.

Throughout the Koyukuk drainage many sites have been reported, but only a few have been located and fewer yet have been excavated. Exclusive of the Ipiutak-related houses at Hahanuden, only one housepit site has been found by anthropologists without the assistance of local residents.

A number of settlements were reported by early travellers, but often, as in the Seghers' and Zane accounts, precise locations are not provided. Some of these houses were also known through oral tradition. For example, Billy Bergman's father and Butler reportedly had semisubterranean houses near the mouth of the Dakli River. These were located on or close to the route followed by Zane in 1885-86 and possibly by Seghers eight years earlier and may be mentioned in their respective accounts. There is, however, no certainty that these houses were the ones mentioned in both accounts. To consider another case discussed earlier, local Allakaket traditions, my own field work there, and the observations of Lt. Allen all point to the presence of a semisubterranean house at the mouth of the Alatna River. The Kayak house is, then, one example of where the three methods of data collection converge on a single item of knowledge, but the exact house Allen mentioned may not have been the one excavated and designated as the Kayak house.

In Chapters 2, 3, 4 and 5 of the present study there are accounts of local consultants' information on propitiation of animal spirits and disposition of their remains, minor variations in Athapaskan and Inupiat behaviors, how life was lived in traditional semisubterranean houses, and how the houses were constructed. There are, of course, gaps in each of the preceding categories of information, primarily because I failed to ask the right questions and did not achieve an equitable balance of information for both ethnic groups living in the region.

Problem areas and/or discrepancies between oral tradition and archaeologic excavation have been discussed in detail in chapter 4, but we have seen that consultant descriptions and the archaeologic finds differ in only a few minor points, although information derived from each method adds supplementary detail. Had there been no archaeologic or historic description of these houses, a reasonably accurate account of them would stand from oral tradition accounts alone. One must note, however, that the full description did not come from any one person or from those living in a single settlement. Especially surprising to all was the discovery during excavation of the use of birchbark roof shingling. Conversely, oral knowledge provided a few details not recognized in the excavations, the ventilator hole, for example. When one of these two methods of collecting cultural information is used to the exclusion of the other, important cultural information can be missed. From oral tradition came information about space utilization in the form of seating/living arrangements within the house which is only weakly reflected in the archaeologic floor distribution of artifacts, and from archaeology came specific information on the artifact assemblages and faunal refuse. Thus from the use of these two methods together far greater insight into traditional culture has been obtained than would been had each been used alone.

The third method of data collection, review of historical documents, or ethnohistory, *sensu stricto*, either verified oral reports or provided additional detail not available from other sources. For example, information recorded by Adams and Seghers in 1866 and 1877 that only incompletely described the overall form of the structures (Adams 1982, Mildred 1943) and White's relatively complete description (n.d: a., b., c).

In early May of 1866, Adams recorded that the semisubterranean houses at Kateel and on down river had been vacated for brush ones because water had filled the winter dwellings during spring breakup. He also noted that at one house near the confluence of the Koyukuk with the Yukon the roof was so low it was impossible to stand upright in it (Adams 1982:148). Later, he also commented on the small interiors of various houses, observed skin covers over the smoke holes and the practice of throwing the remains of the fire out through the smokehole when it was time to retire. His comments on these houses are particularly important because they are the first, and possibly the only direct report of life inside a traditional Koyukuk River semisubterranean house. Seghers also stayed in such houses, but the one he describes appears to have been a modified structure and his quarters there were in an auxiliary room.

On 23 March 1901, J. T. White, an MD assigned to Cantwell's Revenue Marine operation on the Yukon, examined the ruins of a semisubterranean house, located at the confluence of the Dall River with the Yukon. This house had been occupied until 1895-96 by Dummy John, an immigrant mute from the Koyukuk (White n.d: a., b., c). The following quotation, from White n.d., pages 18-19, is the only adequate description of a non-archaeological Koyukuk house to come to my attention.

> Before these people learned the art of building log cabins they lived in small earth-covered yorts half underground. On the Dall River some 300 yards above Fort Shumaker are two of their old habitations now abandoned. The larger of these two (both of them are of one room only) has a floor space of about 10 by 12 feet [stated as 14-ft-square in White n.d. b] and is some three feet below the surface of the ground. In this scooped-out place are set 8 posts, one in each corner and two in the center at either end supporting a double ridge-pole. The posts on the sides and forming the corners of the house are some two and a half feet high and the end posts are about five feet high. These eight posts with the stringers connecting them form the framework of the house. This is covered, roof and sides, with logs of spruce and birch three of four inches in diameter, split open and laid close together. The low side walls slope sharply inward and the roof is very steep. The entrance extends forward about four feet from the house proper and is made by extending two logs from the forward center posts

> outward into the ground, and covered with split logs the same as the rest of the house. To enter from the outside one must descend two or three steps through a hole just large enough for the body to pass. Over all is placed layers of grass and then earth to a depth of about a foot. In the center of the floor is a raised fireplace of earth a few inches above the floor and about three feet long by two feet wide, and directly above it is the opening in the roof for a smoke hole. No part of the house is high enough for an adult to stand upright in.

Although White does not mention construction details, e.g., the birchbark shingling done before the sod is laid over the building, the information he does present is in accord with that from houses that were excavated except that the tunnel entrance he describes in much shorter than those from up river. His notes on the use of poles extending forward from the center posts to construct the entrance partially answers one of the questions raised about entrance structure that was left a question mark by both oral tradition and archaeology.

Clearly, neither oral tradition nor archaeology or history alone was able to provide in-depth information for description of the Koyukuk winter house, its construction and its manner of occupancy that the use of the three together has given us. Information derived from each can augment and reinforce that obtained from the others, while at the same time providing a test of validity.

Conclusions

The present work has provided comprehensive information on Koyukuk River house construction, and the comparison of the Koyukuk houses with those from other regions of Alaska and the Yukon illustrates that the Koyukuk houses share more traits in common with late Kobuk River prehistoric houses than with any others in the sample.

In each house, Euro-American imported objects far outnumber those of indigenous manufacture, but there are major differences in the types and quantities of faunal remains. Analysis of the floor plots of objects and faunal remains, against my stylized space utilization plan to better understand interactions and activities within the houses, shows distinct patterning, but only partially corroborates the utilization of space described by elders. However, composite plots of male vs. female objects do fit the plan. The test for ethnicity based on ceremonial remains in the houses was not definitive because the size of the sample is too small and the time period investigated is too short, but the proposition should not be overlooked as a possible indicator of ethnicity in archaeologic sites.

This study also illustrates that using an ethnoarchaeologic approach, where information is derived from oral tradition, ethnohistory, and archaeology, to investigate human behaviors in late archaeologic contexts, provides greater insight and a higher degree of validity to the results than can be obtained by using any single approach.

The assemblage of material recovered, especially when viewed against the backdrop of environmental, demographic and historical information leads to a number of questions of broad scope, in some cases largely of theoretical and methodological interest. For example:

1. Time of deprivation. Ethnohistory and oral tradition show that direct penetration of the home territory of the upper Koyukuk Indian bands occurred at a time when there was a scarcity of caribou and moose in the region. How do the remains from the houses, faunal remains in particular, reflect this? One might also ask to what extent dealings with the whites on the Yukon, including trade,

and use of their introduced technology helped them overcome this problem.

2. Behavioral correlates of archaeological data. The regional resources or natural environment and the traditional lifeways of the Koyukuk people have been examined. What are the concordances, discordances and non-relationships between the behavioral correlates that may be deduced from the archaeologic data on the one hand and from ethnographic information on the other? Restated, what reconstructions of lifeways could one derive through archaeologic and environmental data alone?

3. Culture change. We have seen that the implement inventory of the houses excavated represent three classes: wholly indigenous, indigenous forms made locally from imported Euro-American material, and imported manufactured items. Negative aspects of the inventory also should be considered, although caution must be used when explanations are advanced for the absence of certain items, whether they are indigenous artifacts or imported Euro-American goods and implements. In assessing the overall assemblage, including house construction, what can be said regarding culture change on the Koyukuk River? This question can be reviewed in relation to precontact and later historic stages in the region, both diachronically and synchronically, in terms of the situation on the Yukon and elsewhere in the north. Another way of looking at the question above is to ask what insights into substitutive replacement and cultural additions may be achieved by looking at the transitional inventory of material culture in the Koyukuk region.

APPENDIX 1
TRANSITIONAL WINTER HOUSE

In 1968 Inupiat residents of Alatna told me about an old shaman's house (Pl. 16) located approximately two kilometers below their present village. When it was investigated, the house appeared to postdate initial contact on this part of the river, but it did have several architectural features that were transitional between traditional semisubterranean winter dwellings and contact traditional cabins. Growth around the site was cleared and the house was photographed, measured and sketched. The information recovered is presented in this study as an example of housing modified in response to outside influence.

The Setting

The Shaman's house is located in a moderately heavy mixed spruce-poplar forest area on river bottom land one complete "S" bend or about three kilometers below Allakaket on the west side of the river (Fig. A1.1). It is situated about 60 metres from the present edge of the river but only 6.4 meters from an old bank escarpment. On lower ground towards the river and especially on the broad projecting point of land adjacent to the site, there is dense growth of younger deciduous trees and saplings. Within recent decades, the Koyukuk River has shifted and has left shoal water, gravel bars and willow thickets immediately riverward from the site. A short distance downriver, deeper water comes close to the edge of the old forest and tundra-covered terrace. Thus, as indicated by the vegetation, the relationship of the site to the river probably was different when it was occupied. Adjacent to the transition house are the bottom logs from a cabin. These were left undisturbed.

Oral Tradition and Ethnohistory

The transition house features at this site appear to belong to a forerunner of Alatna, a contemporary village located a short distance farther up the Koyukuk River from the transition house site. J.E., an Alatna Inupiat, stated that his grandparents, Old Tobuk and Tenook, as well as the shaman, Misuk, lived at this location "at the time of Arctic City." In 1898-99 Arctic City was occupied by miners, soon thereafter it became a native village, and by 1911 it was largely abandoned. Local residents moved to Allakaket, Alatna and Hughes. J.E. stated specifically that his grandfather had lived in the "igloo," not in a cabin next to it. This site may also be the one visited by Clara Heinz in 1907 when she attended a shaman's performance in a house below the contemporary village of Alatna (Burke 1961). In later years this location was used as a fishing camp, and it is this later usage that accounts for modern metal trash strewn over the surface.

Genealogies for Misuk and Old Tobuk are illustrated in Figure A1.2. Misuk died in the winter of 1909 at Alatna, while Old Tobuk was the Inupiat headman (Burke 1961; Allakaket mission

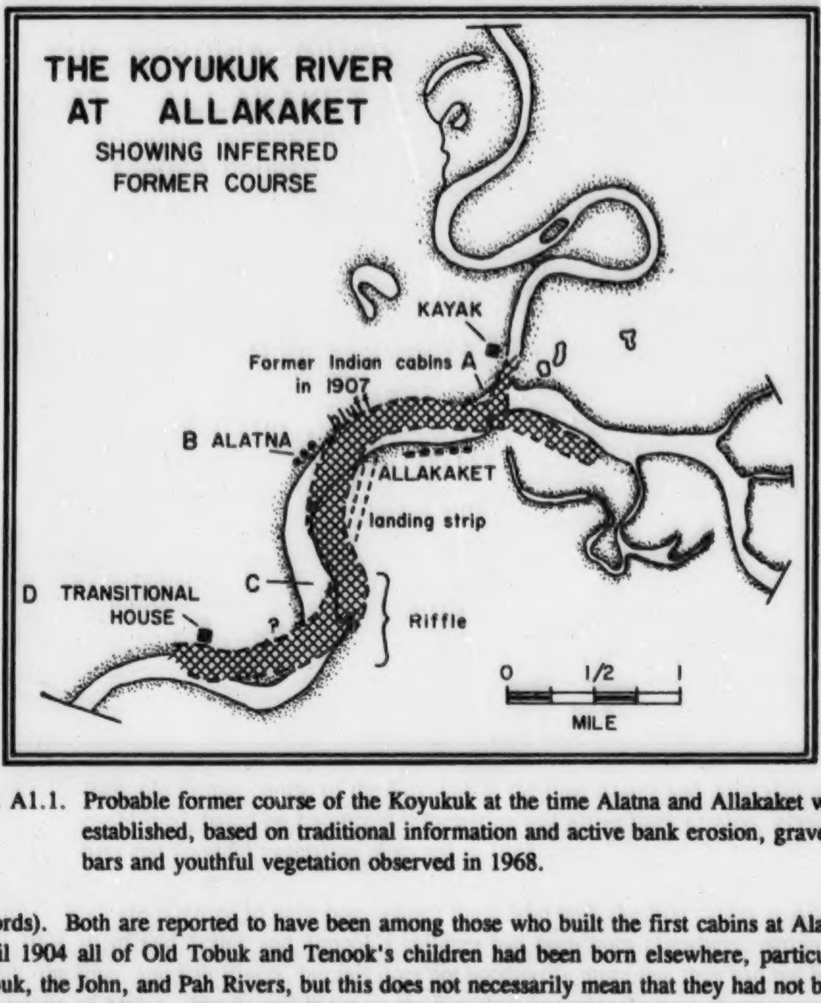
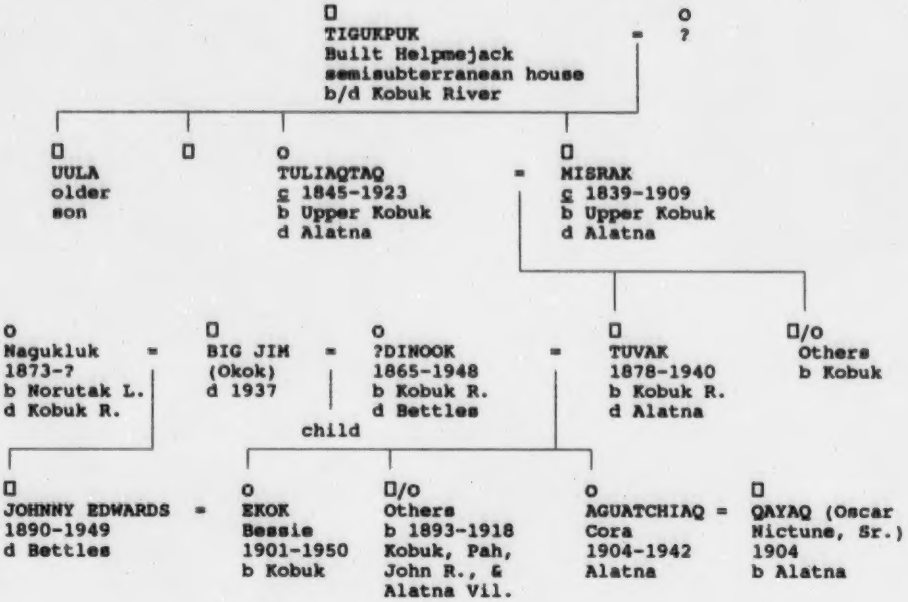

THE KOYUKUK RIVER
AT ALLAKAKET
SHOWING INFERRED
FORMER COURSE
KAYAK
Former Indian cabins A
in 1907
bluff
B ALATNA
ALLAKAKET
landing strip
C
D TRANSITIONAL
HOUSE
?
Riffle
0
1/2
1
MILE

Fig. A1.1. Probable former course of the Koyukuk at the time Alatna and Allakaket were established, based on traditional information and active bank erosion, gravel bars and youthful vegetation observed in 1968.

records). Both are reported to have been among those who built the first cabins at Alatna in 1907. Until 1904 all of Old Tobuk and Tenook's children had been born elsewhere, particularly on the Kobuk, the John, and Pah Rivers, but this does not necessarily mean that they had not been living in the vicinity of Alatna. The Inupiat living on the Koyukuk just after the time of contact and especially during the gold rush frequently made trips to the Kobuk, but throughout the year they exploited resources in a large region circumscribed by the upper Kobuk, Alatna, middle and upper Koyukuk Rivers and the upper Koyukuk goldfields. Various lines of evidence suggest that the transition house was occupied on a regular basis during the first decade of the present century, possibly no later than late 1907.

On 3 November 1907 Miss Carter, the first resident deaconess at St. Johns-in-the-Wilderness, wrote to Archdeacon Hudson Stuck: "We have quite a Kobuk village...eleven cabins have been put up


□
TIGUKPUK
Built Helpmejack
semisubterranean house
b/d Kobuk River
=
○
?
□
UULA
older
son
□
○
TULIAQTAQ
c 1845-1923
b Upper Kobuk
d Alatna
=
□
MISRAK
c 1839-1909
b Upper Kobuk
d Alatna
○
Nagukluk
1873-?
b Norutak L.
d Kobuk R.
=
□
BIG JIM
(Okok)
d 1937
=
○
?DINOOK
1865-1948
b Kobuk R.
d Bettles
child
=
□
TUVAK
1878-1940
b Kobuk R.
d Alatna
□/○
Others
b Kobuk
□
JOHNNY EDWARDS
1890-1949
d Bettles
=
○
EKOK
Bessie
1901-1950
b Kobuk
□/○
Others
b 1893-1918
Kobuk, Pah,
John R., &
Alatna Vil.
○
AGUATCHIAQ =
Cora
1904-1942
Alatna
□
QAYAQ (Oscar
Nictune, Sr.)
1904
b Alatna

Genealogy for transitional house and middle Alatna River Inupiat. Variant spellings of these names appear in manuscript records and published accounts as follows: Uula/Oola, Tuliaqtaq/Delaktuk or Delahtok, Misrak/Misuk or Mesuk, ?Dinook/Tenook, Tuvaq/Old Tobuk, Qayaq/Kayak. The phonetically correct spellings are provided by Eliza Jones, Alaska Native Language Center.

Fig. A1.2. Genealogy of Inupiat residents purported to have lived in the transition house.

just below the cliffs [Alatna Bluff] opposite us..." (Carter correspondence in Episcopal Church Historical Archives, Austin, Texas). The location cited fits precisely the present one of Alatna (B in Fig. A1.1). Miss Carter arrived at Allakaket that July, and the archdeacon left at the same time. This communication strongly suggests that the Kobuk village of Alatna across from Allakaket developed during the short interval between Miss Carter's arrival and the date of the letter to Stuck. The contemporary village of Alatna is located about 2.5 kilometers upstream from the transition house.

Introduction of additional information confuses this picture. Hudson Stuck noted that there already were three Indian cabins at the site of Allakaket when he built the mission there in 1907. This has been verified through local information (field notes 1961-1972). However, Stuck was not specific about where the Inupiat in the area lived and he did not record any cabins at the mouth of the Alatna River, immediately north of and across from Allakaket. When Carter stated the Kobuk village was "opposite" Allakaket she should have said "across from and below" to place the village in proper relation to the Alatna Bluffs. Three years earlier Lind (1906) recorded that the Inupiat, Big Charlie [Suckett], had a cabin at the mouth of the Alatna but he did not specify on which side of the Koyukuk the cabin was located. Schrader also found people at this point in 1899 but he does not give their ethnic affiliation. Further, some of the Indians and a trader, who moved to the vicinity of Allakaket about 1908 soon after the mission was established, built across from Allakaket just below the mouth of the Alatna, but well above Alatna village (field notes 1961-1972; Burke 1961:47). Some Inupiat had cabins in Allakaket instead of across river in Alatna. Thus, initially, the community pattern was more complex than is apparent from accounts by mission staff (cf. Stuck 1917, 1920a, 1920b; Episcopal Church Archives notes 1973). No early community plan, detailed map or house list has been located. Published statements indicate that in 1907 Alatna was at its present location (cf. Carter cited above). For example, Miss Heinz (Burke 1961) wrote of hearing the Eskimo Misuk's drums from Allakaket. In 1911 Hudson Stuck noted that "...half a mile away, on the other bank of the river are the Kobuk...." Unfortunately, several times Stuck gave a location for Alatna that is farther down the river at the Malamute Riffle, identified as Location C in Figure A1.1 (Stuck 1914, 1917:329, 1920c:182). The discordance of information may be laid to changes in the position of the riffle, changes in the location of some Alatna cabins, especially on land now removed by the shifting river channel, and imprecise documentation. Nearly all accounts cited were intended for audiences that did not require precision. The actual distance between the mission buildings in the center of Allakaket and contemporary Alatna is three-quarters of a mile.

In no case does the preceding discussion include the transitional house location, which is farther down river. Furthermore, late in 1907 both Old Tobuk and Misuk already had cabins in the new village. This was reported by E.S. of Huslia who went to Allakaket for his first Christmas in 1907 or 1908. Primary occupation of the transitional house would have preceded that date. Because of the closeness in time and the succession of occupation between that site and Alatna by known Alatna residents, it is likely that the transition house residents moved to the contemporary site of Alatna when that village was established in 1907.

Description and Discussion

Description of the house is illustrated in Figures A1.3, A1.4, and Pl. 16. There attention is drawn to certain features significant to the following conclusions. Erection of the house appears to represent a single instance in time, but the dwelling undoubtedly was used for several years. If the structure had been built as late as 1900, twenty years of occupancy would extend it into the period when the location was nominally abandoned, but it has been noted that the site later became a fishing camp.

Only traces of the bottom logs of the adjacent structure remain. But logs and log structures are portable, and this structure may have been dismantled for use elsewhere. This is not the case with the transition house. It was not of a portable or easily dismantled type of construction; and it had few logs that could be salvaged for other uses.

The house is not of true semisubterranean construction with an excavated pit. Instead, it is built with the floor close to the ground presenting the illusion of being a semisubterranean house. The effect was created by banking the walls with earth and turf. This was done primarily for insulation. Low interior height further reduced heat loss and reduced the space that had to be heated. The sides are about 145 cm high and when examined were banked to a height of about 100 cm at one front corner and 120 cm at the other corner. The back was not as highly banked. The insulation may have slumped from an originally greater height. A single window at the front limited the height to which this part of the wall could be banked. At the entry, there are retaining boards that hold back the turf and dirt. Inasmuch as there is no excavated house pit, it was necessary to obtain fill from elsewhere, probably in part from the 1.0 x 1.5 m rectangular pit located three metres behind the house.

In construction, vertical side-wall planks were retained at the top by a horizontal log which ran from corner post to corner post along the sides. It is not clear how the end-wall planks were held in place. Critical parts of the upper structure have fallen, rotted or disappeared. Nails were driven into nearly every part of the structure. Some of these were used in the construction, but others probably were accessories such as coat hooks. Some nails may have been placed later, following the main phase of construction.

The turf beneath the window opening was not probed to determine if glass sherds were present. The possibility that an alternative to glass glazing was used in the house did not arise until Stuck's (1920c:70) description of membrane windows in half-underground Inupiat houses on the Alatna River was read. However, in the same volume Stuck comments that in 1906 the Alatna River "Eskimo" had not learned to build with logs. This statement is interesting but may be highly inaccurate especially inasmuch as earlier Lind (1906) had reported well-built "Eskimo" cabins on the Alatna River. Conversely, elsewhere Stuck commented on "Eskimo" log cabins. The doorway lintel, which had fallen before the time of inspection, was constructed from a recycled piece of a white painted window frame. The top of the door would have stopped and sealed against this piece. Perhaps it was added later after initial construction. By 1908, mission records in the Episcopal Church Historical Archives state that the church was providing windows and doors for houses being built in Allakaket. However, glazed windows were used by traders several decades earlier along the Yukon River.

Inside the house there are many heavy fallen timbers identified as ridge poles, a purlin that had

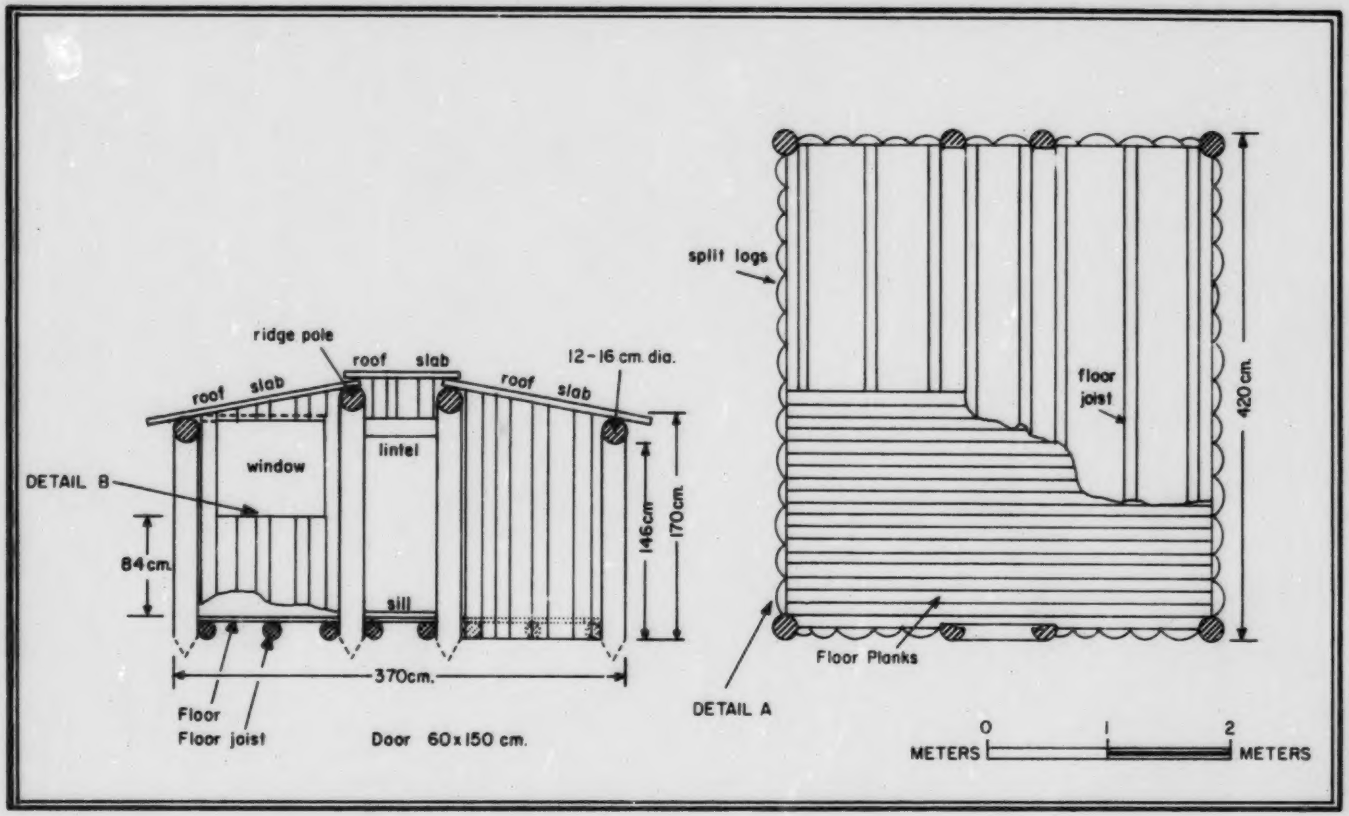

ridge pole
roof slab
roof slab
roof slab
12-16 cm. dia.
window
lintel
DETAIL B
84 cm.
sill
146cm
170cm.
370cm.
Floor
Floor joist
Door 60x150 cm.
split logs
floor joist
420 cm.
Floor Planks
DETAIL A
0
1
2
METERS
METERS

Figure A1.3. Reconstructed end view and floor plan of the transition house.

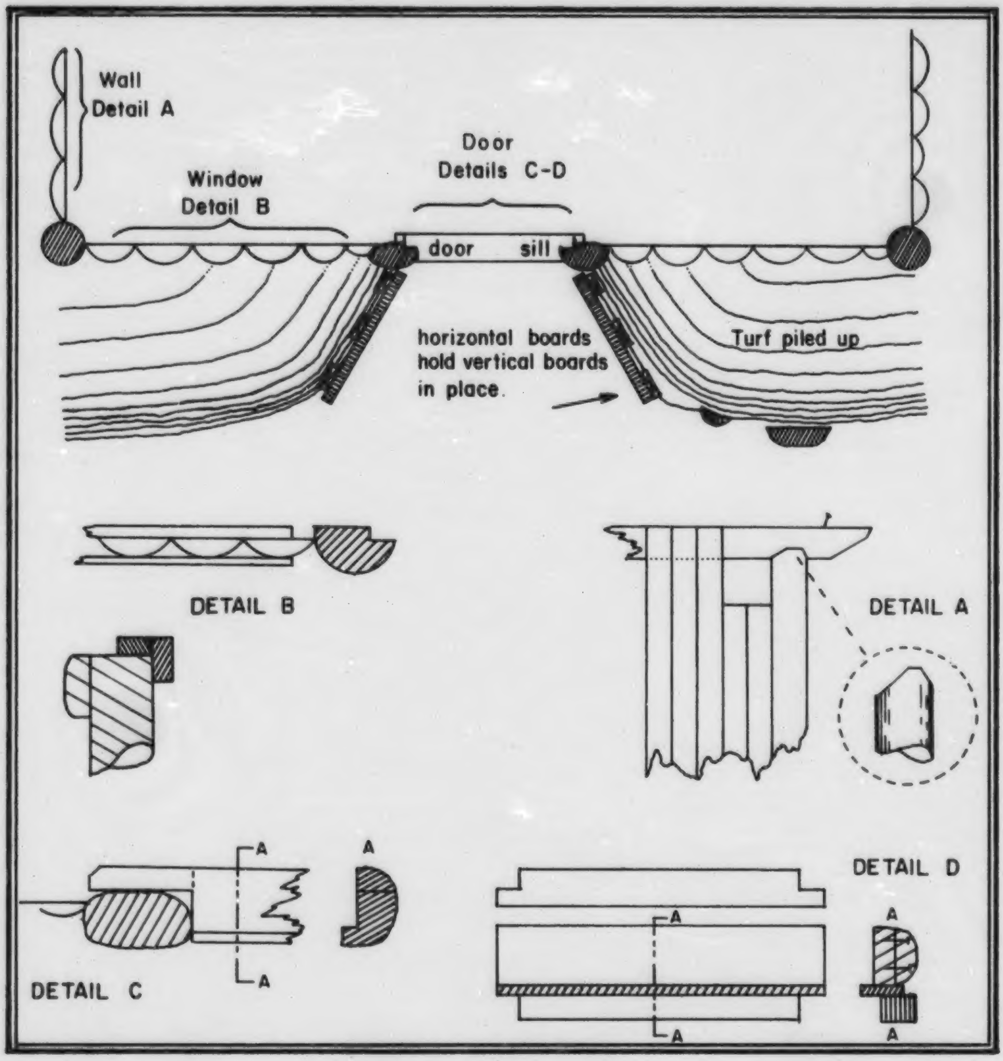

Wall
Detail A
Window
Detail B
Door
Details C-D
door
sill
horizontal boards
hold vertical boards
in place.
Turf piled up
DETAIL B
DETAIL A
A
A
A
DETAIL C
DETAIL D
A
A
A
A

Fig. A1.4. Transitional house construction details.

been placed along the top of one of the walls, split-log roof slabs, and other posts and poles. Turf and dirt from the roof now overlay the floor. Some upper parts of the structure are decayed and the reconstruction presented here is in part inferential. Although dual ridgepole construction is inferred, the presence of heavy paired upright poles in the walls at the front and back and the recovery inside of apparent ridge poles makes this a reasonable supposition. One ridge pole is notched to fit over a post, as is customary in some traditional construction. The other is unmodified.

Distinctive characteristics of the transition house are its small size (3.7 m by 4.2 m), vertical slab wall construction with purlin, and dual ridge pole/and post construction.

Conclusions

This house is interpreted as being transitional in form on the basis of a number of modern features incorporated into an apparently traditional type. Traditional continuities include the following elements:

1. Banking walls with turf and dirt.
2. Dual post/ridgepole construction.
3. Roof purlin/upper wall retainer supported by corner posts.
4. Small size.
5. Relatively low height, except in center.
6. Vertical wall boards.
7. Ventilator opening in corner?

Modern or transitional features include the following:

1. All posts are moved out to and incorporated into the walls.
2. Walls are vertical.
3. No sunken tunnel or surface passage for an entry.
4. High doorway.
5. Plank floor, laid on floor purlins.
6. Window.
7. Use of nails and spikes.
8. Relatively refined carpentry in places, e.g., around doorway.
9. Height at center to underside of ridgepole of c 180 cm, although low, shows an increase over that of earlier indigenous dwellings.
10. Floor at ground level; no depression or housepit.

It is visualized that this house had its origin in a traditional interior Inupiat igloo or Koyukuk Athapaskan naklukno, which in the 19th century were in most respects similarly constructed. To develop the transitional house from the traditional semisubterranean winter dwelling, construction plans are revised to accommodate complete surface construction; the tunnel or entry passage is eliminated, height of the door increased, the floor covered with planks instead of spruce boughs, width of the roof and wall poles is increased, the walls are made vertical, and the posts are moved out to positions within the walls. Earlier, interior placement of posts was in part done to accommodate inclined walls. The form of architecture thus derived is fundamental and simple. It incorporates elements widespread in North America and may have been developed independently. Modernizing features in this house differ from those in partially traditional houses on the Kobuk River observed by Giddings in 1940 (Giddings 1952: Fig. 6-7). However, some features noted here, such as surface construction, are present on the lower Yukon River in historic summer houses (VanStone 1984 Fig. 3). The plausible line of development from traditional Kobuk-Koyukuk houses to this house is not verified elsewhere, but considering the persons reported to be occupants of this house, it is the most reasonable explanation of its development.

Although this house has been designated as being transitional, structurally it is not a transition from a traditional semisubterranean house to the conventional log cabin. But culturally, it is transitional from one type of housing norms to another. It is indigenous-type architecture that incorporates new modes of construction and new attributes, as pointed out above. These modifications do not evolve into log cabins but lead to an unrelated type of structure, one which in some regions provides an alternative to log cabins and frame houses. With the establishment of new permanent structures at central bases in the first decade of the present century, such experiments in architecture seem no longer to have been practiced.

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PLATES

PLATE 1

GLASS TRADE BEADS

The beads are identified according to the categories used in Table 5.2.

All examples are from the Kayak House SdIb-1 with the exception of the two in the centre of the bottom row which are from Lake Creek.

No.	Identification and Description
A.	Group 1, black
B.	Groups 4 & 2, purple
C.	Group 3, purple tube cylinder
D.	Group 5, brilliant blue
E.	Group 6, robin's egg blue, wound?
F.	Group 7, deep blue
G.	Group 7, aquamarine
H.	Group 8, rose or salmon with ridge
I.	Group 9, pink
J.	Group 10, green-lined terracotta (Cornaline)
K.	Group 11, like group 10, tube cylinder
L.	Group 12, red over opaque white (Cornaline)
M.	Group 13, white
N.	Group 14, green, clear, split half
O.	Group 15, cupric green (burned or eroded blue?)
P.	Group 16, "seed" size category, various colors
Q.	Lead shot

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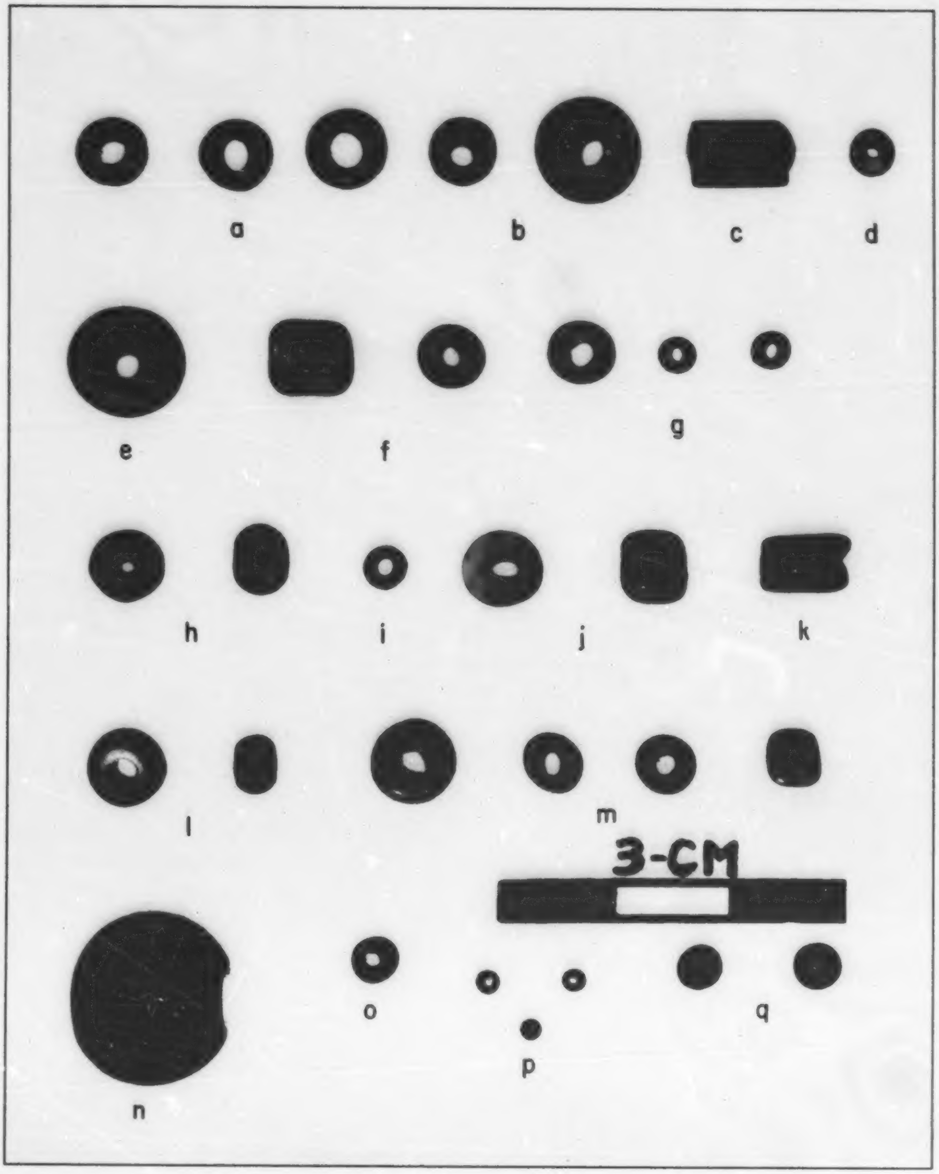
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Plate 1. Glass Trade Beads.

PLATE 2

SMALL ARTIFACTS

No.	Identification	Catalog Number
A.	Glass buttons	SdIb-2:14, ScIc-1:39, ScIc-1:14
B.	Flange from cartridge case	SdIb-1:13
C.	Drop of lead	SdIb-1:18
D.	Tip of triangular file	ScIc-1:41
E.	Wood screw	SdIb-1:28
F.	Musket balls	SdIb-1:17, SdIb-2:11, SdIb-1:1
G.	Trigger guard (two views)	SdIb-1:23
H.	Clay pipe stem	SdIb-1:14
I.	.44 cal. rimfire cartridge cases	SdIb-1:20, SdIb-1:40, SdIb-2:7, ScIc-1:36
J.	Metal button	SdIb-2:25
K.	Powder canister screw cap	SdIb-2:26
L.	Powder canister screw cap	SdIb-1:54
M.	Firearm side lockplate	SdIb-2:3
N.	Lavaliere	SdIb-1:48

NMC Negative No. AC-39-79-9,-10

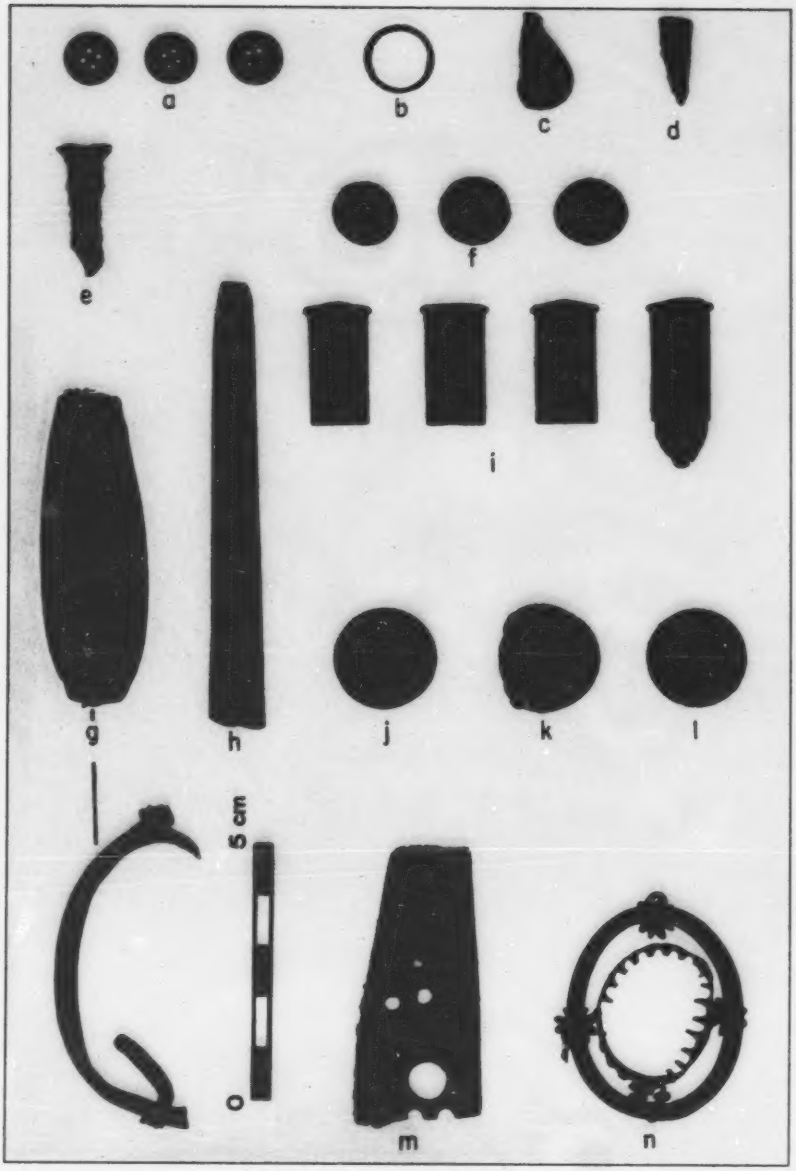
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Plate 2. Small Artifacts.

PLATE 3

VARIOUS ARTIFACTS

No.	Identification	Catalog Number
A.	Battered chert (fire flint?)SdIb-1:16	
B.	Red paint stone	ScIc-1:62
C.	Crooked knife (two views)	SdIb-2:30
D.	Slightly modified bone	SdIb-2:19
E.	Roughly pointed bone	SdIb-2:23
F.	Sharply pointed wooden item	SdIb-1:53
G.	Leather strap (suspender strap)	ScIc-1:32
H.	Folded metal object	SdIb-2:2
I.	Ceramic shard	ScIc-1:38
J.	Teaspoon fragment	ScIc-1:15
K.	Pocket knife	ScIc-1:24
L.	Cap can (base)	ScIc-1:31
M.	Cap can lid	ScIc-1:2

NMC Negative No. AC-39-79-6, -7

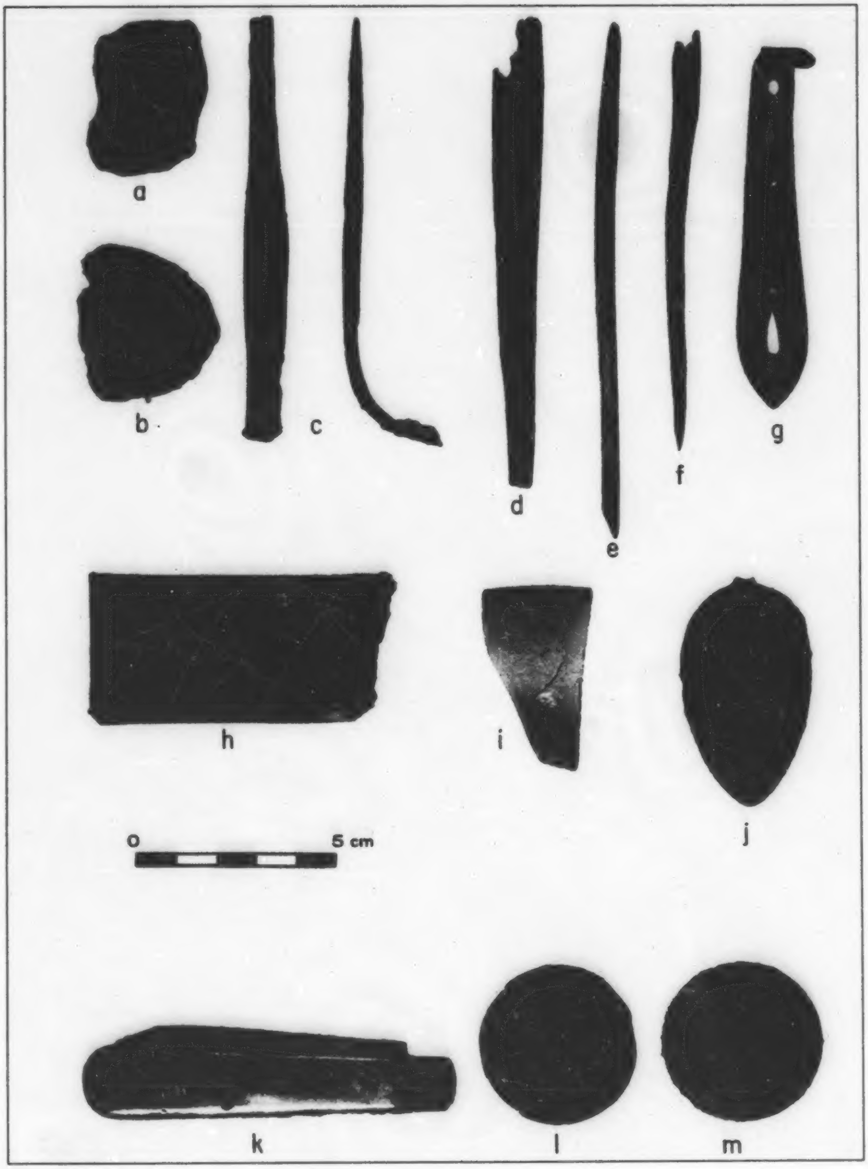
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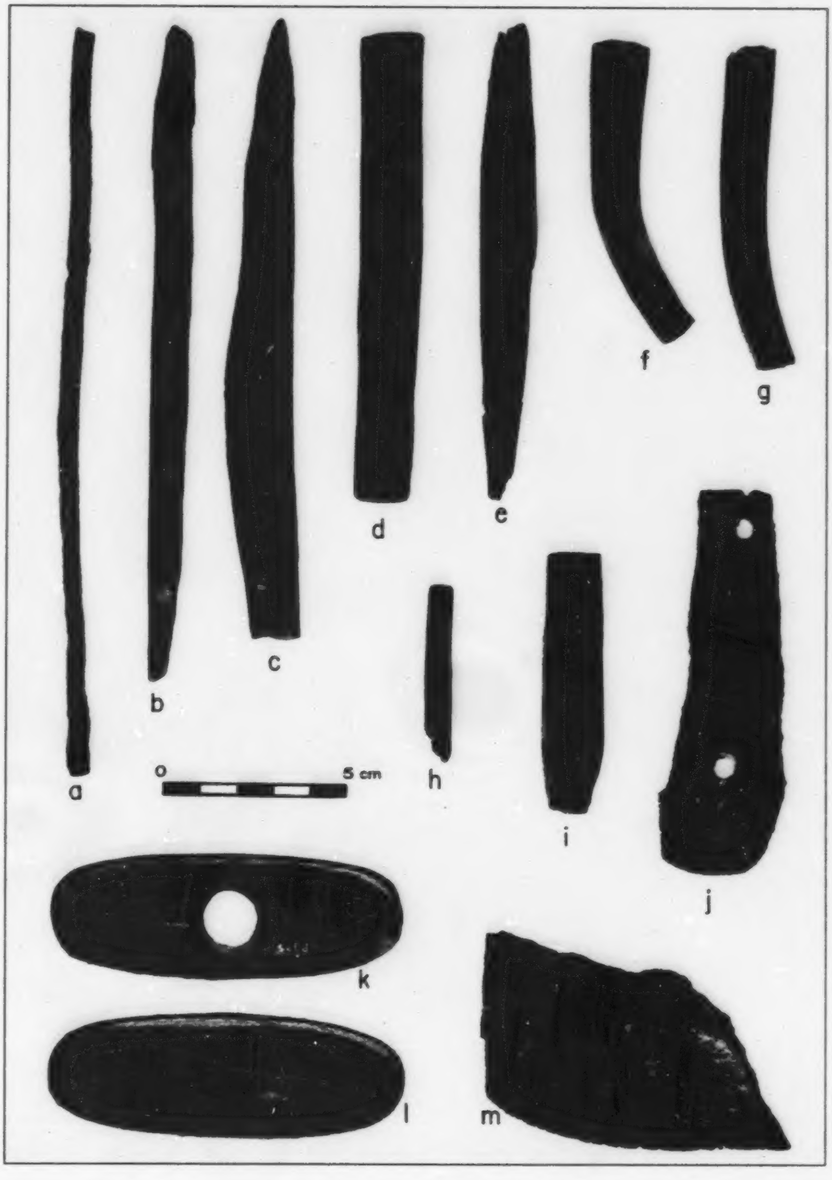
Plate 3. Various Artifacts.

PLATE 4

VARIOUS ARTIFACTS

No.		Catalog Number
A.	Rolled iron rod	SdIb-1:38, SdIb-1:45
B.	Roughly prepared bone rod	SdIb-2:20
C.	Bone splinter with hache marks	SdIb-2:36
D.	Wooden bar	SdIb-1:55
E.	Roughly bipointed wooden piece	ScIc-1:21
F.	Curved wooden piece	SdIb-1:46
G.	Curved antler piece	SdIb-1:29
H.	Small wooden pin	SdIb-1:34
I.	Wooden piece	SdIb-1:51
J.	Iron scraper or adze blade	ScIc-1:13
K.	Powder can top	SdIb-1:12
L.	Powder canister base	ScIc-1:37
M.	Thin blade fragment with serrated edge	SdIb-1:24

NMC Negative No. AC-39-79-5, -8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5 cm

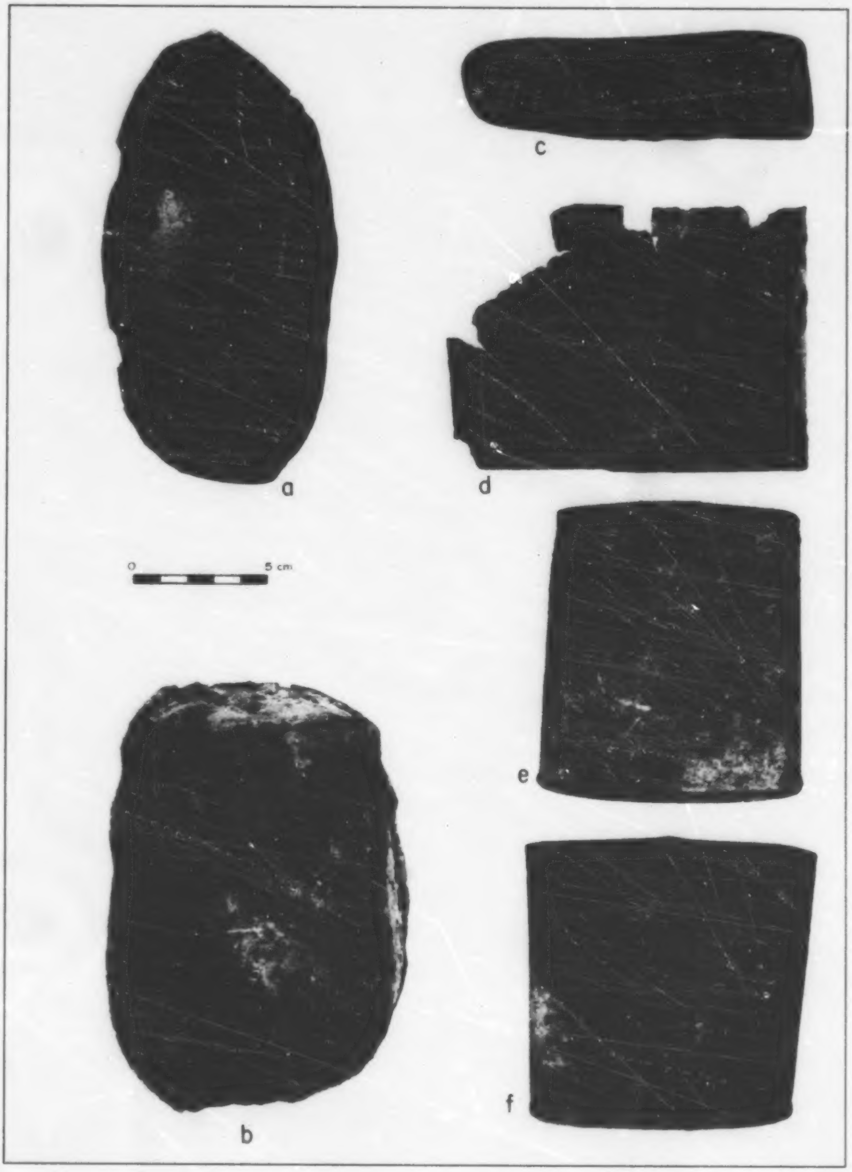
Plate 4. Various Artifacts.

PLATE 5

METAL CONTAINERS AND OTHER OBJECTS

No.	Identification	Catalog Number
A.	Folded metal pan	ScIc-1:1
B.	Folded metal pan	SdIb-2:5
C.	Honing stone	SdIb-2:4
D.	Sheet of metal from a powder can	ScIc-1:33
E.	Powder canister without top	SdIb-2:27
F.	Powder canister without top	ScIc-1:5

NMC Negative No. AC-37-79-3


a
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5 cm

Plate 5. Metal Containers and other Objects.

PLATE 6

HIDE-WORKING STONES

No.	Catalog number
A.	ScIc-1:22
B.	ScIc-1:23
C.	SdIb-1:3
D.	SdIb-1:10
E.	SdIb-1:29
F.	SdIb-1:3
G.	SdIb-1:15

B shows red paint stains.
NMC Negative No. AC-39-79-1

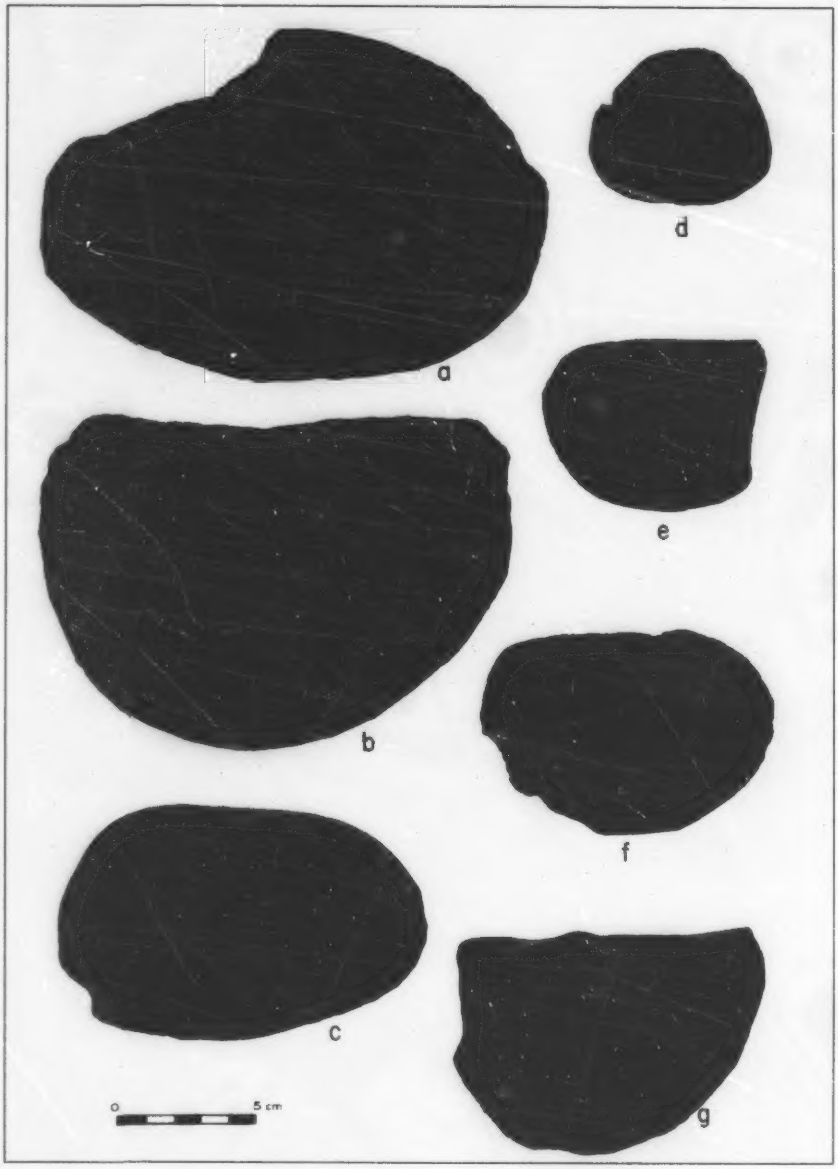
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Plate 6. Hide-working Stones.

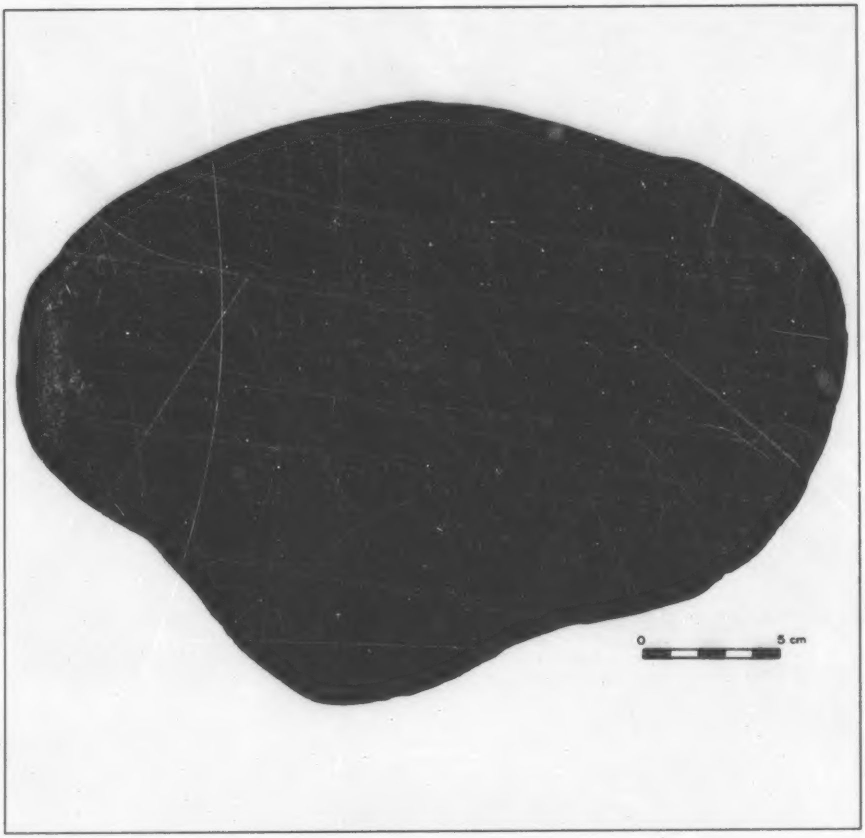
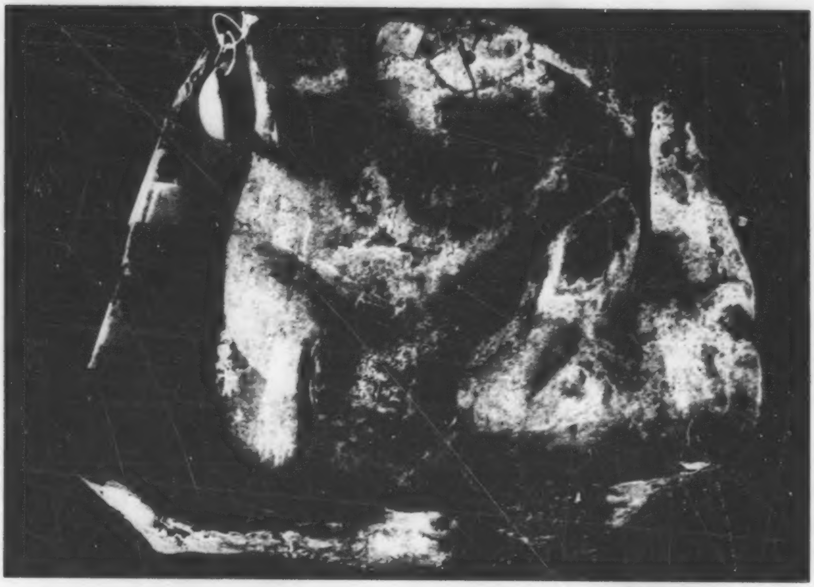


Plate 7. Red Pigment Mixing Basin. Lake Creek House No. 1 (specimen ScIc-1:62). NMC Negative AC-39-79-4.



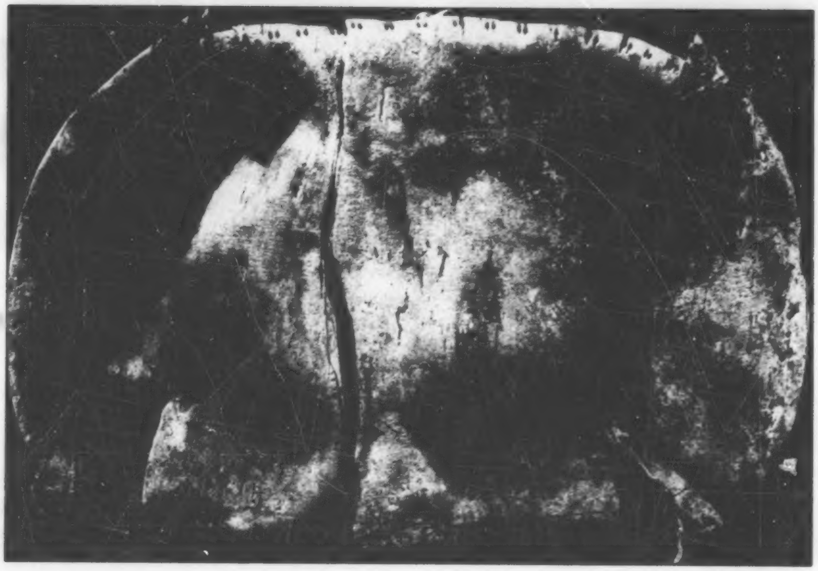


Plate 8. Birchbark Basket Trays. Kayak site (upper): SdIb-1:43; Okak site (lower): ScIb-2:1. Not to scale; upper is 30 cm long, lower is 48 cm.

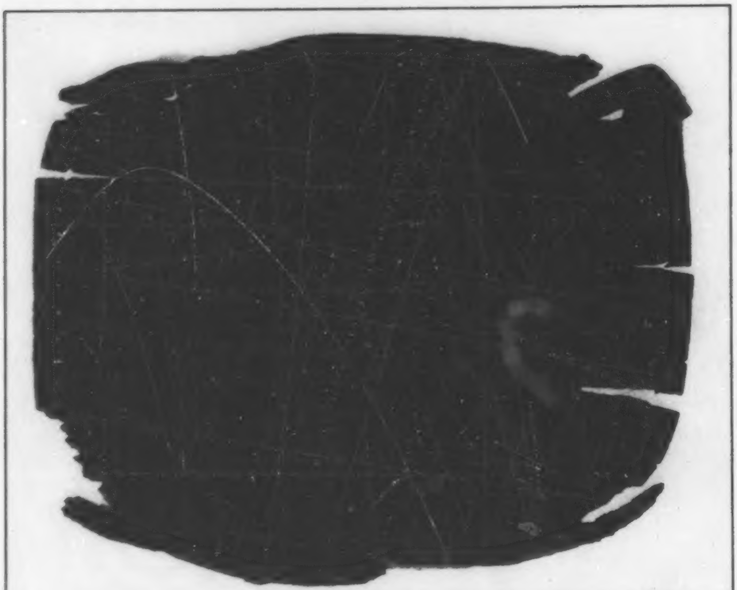


Plate 9. A: Skewer Sticks, with board-shaped accessory in place on the floor at front of Lake Creek House. B: Birchbark basket tray 27 cm long; Lake Creek specimen ScIc-1:46.

Plate 10. Lake Creek Site and Environs. A: The site viewed from the east. B: a more distant view of the site from northeast. The Kanuti River is in the foreground, Lake Creek (Mentanontli River) in the background. The mouth of Lake Creek is located about 100 meters to the right.

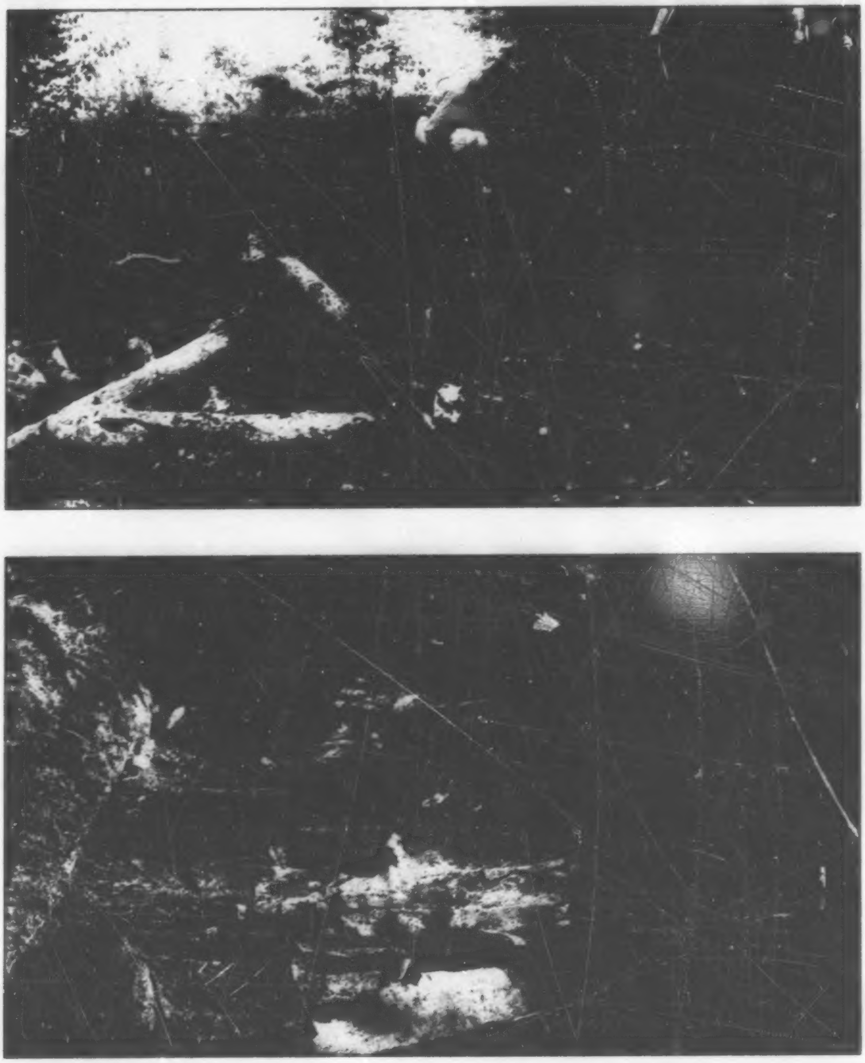


Plate 11. Excavation at Lake Creek. A: An early stage of excavation of House No. 1 exposing fallen posts and other timbers between or protruding above roof sections. B: At a later stage, showing roof poles and birchbark on the right side. Stubs of the centre posts are visible.

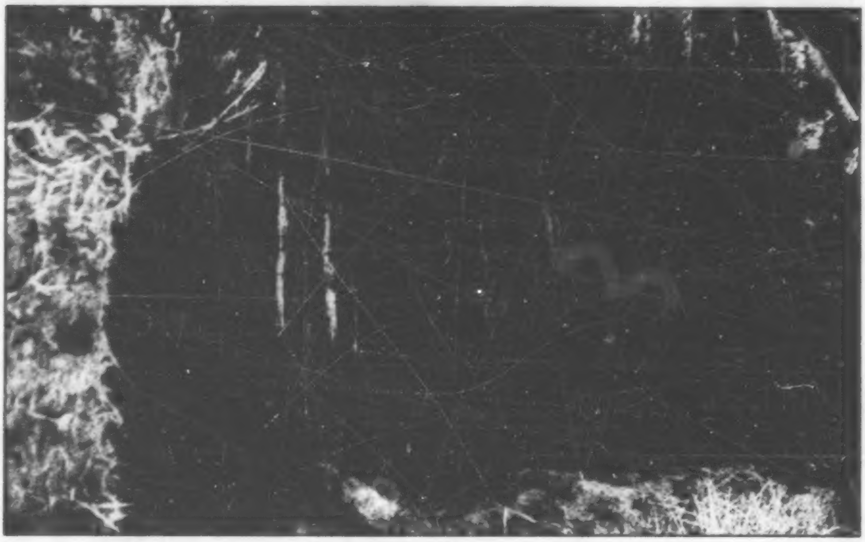
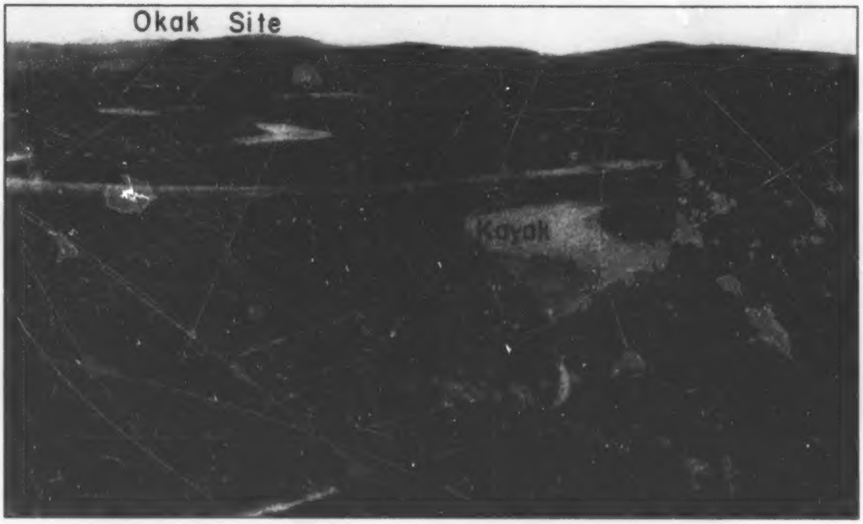


Plate 12. Excavation at Lake Creek. A: Excavation completed, except entry, hearth left intact. Orientation of this view is the same as Plate 11 A. B: Front wall poles exposed prior to completion of excavation.

Plate 13. Floor of Lake Creek House No. 1. The stage of excavation is the same as in Plate 12A. Features exposed are, top to bottom, cut logs on the floor, rear post stubs, cut log on the floor, cut log stratigraphically above floor, hearth, and unexcavated tunnel with on intermediary and one front post.



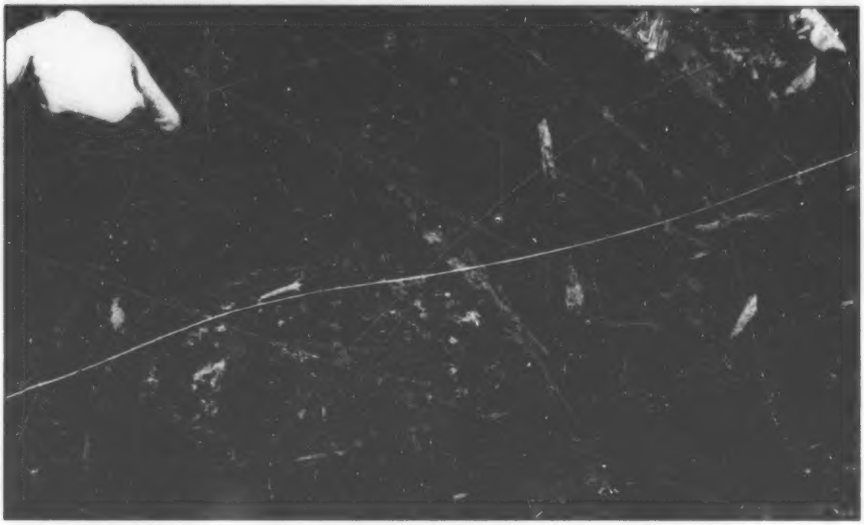


Plate 14. Terrain and Excavation at the Kayak Site. A: The lower Alatna River looking upstream from its mouth. B: Hearth, front post stubs and longitudinal members of the entry structure at the Kayak house. Excavation of the floor layer is complete.

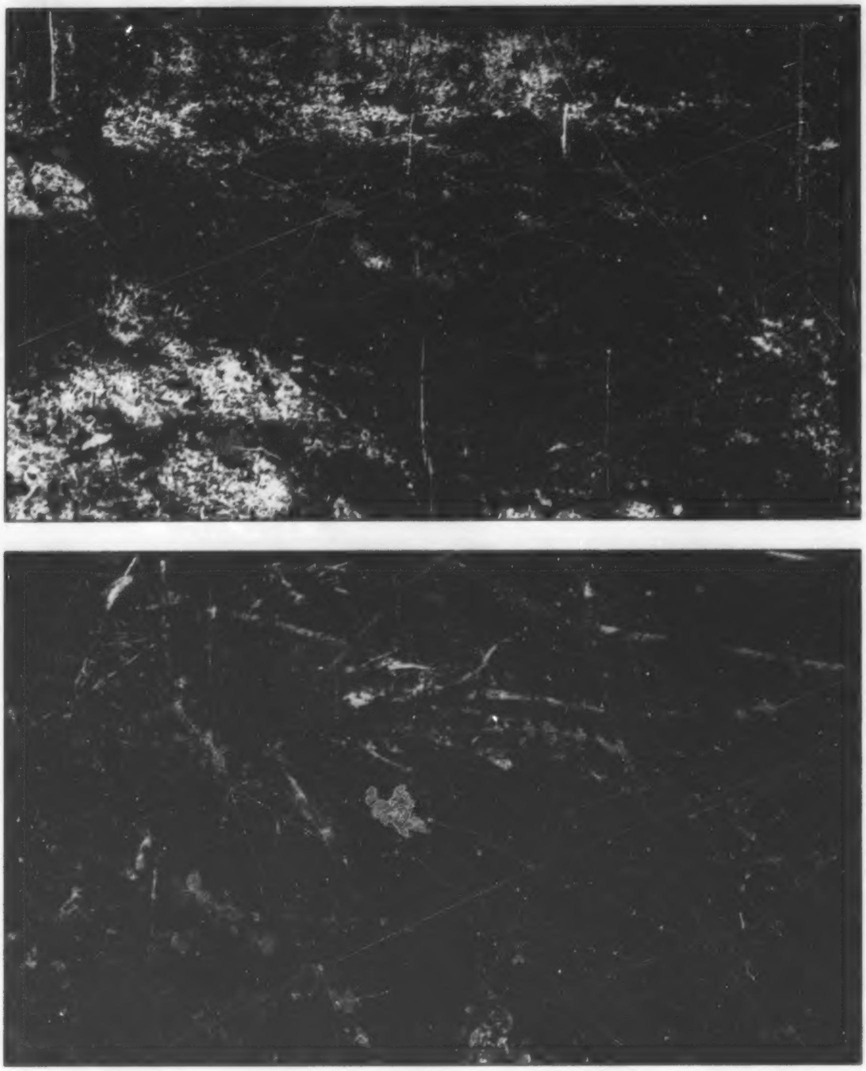


Plate 15. Surface Traces of Okak House No. 1. A: The housepit viewed along its centreline from the front after clearing of shrubs and small trees. B: The left rear corner (according to orientation of view A) showing an "eared" notched corner post and two lateral wall stakes.

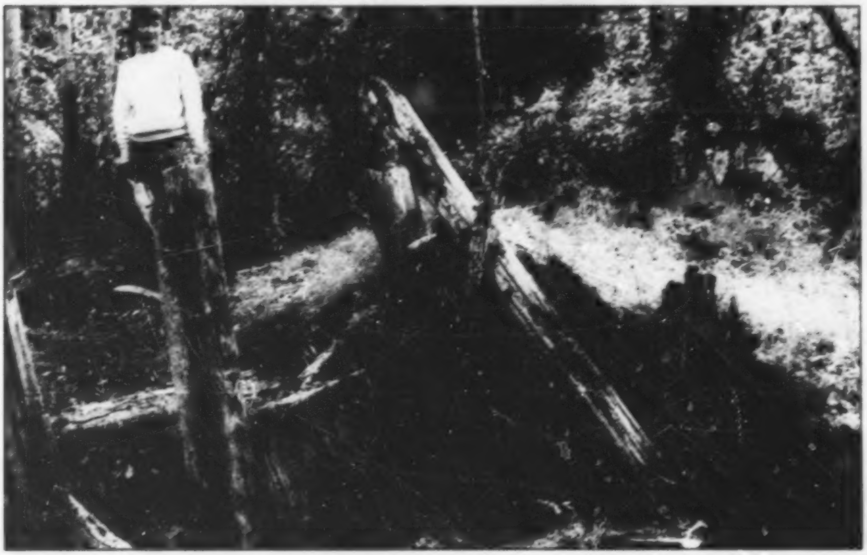


Plate 16. The Transition House below Alatna. A: The front interior as viewed from the rear. B: A closer view of one front corner.

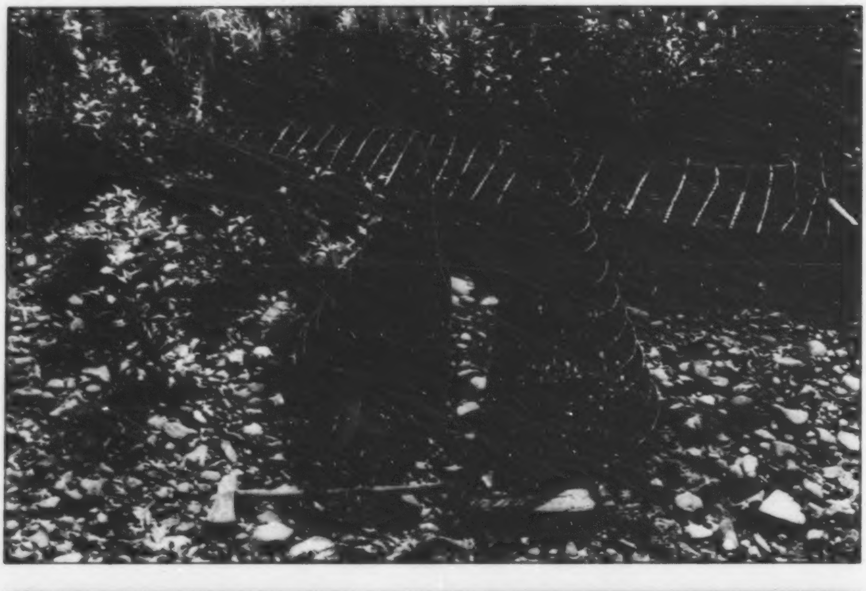
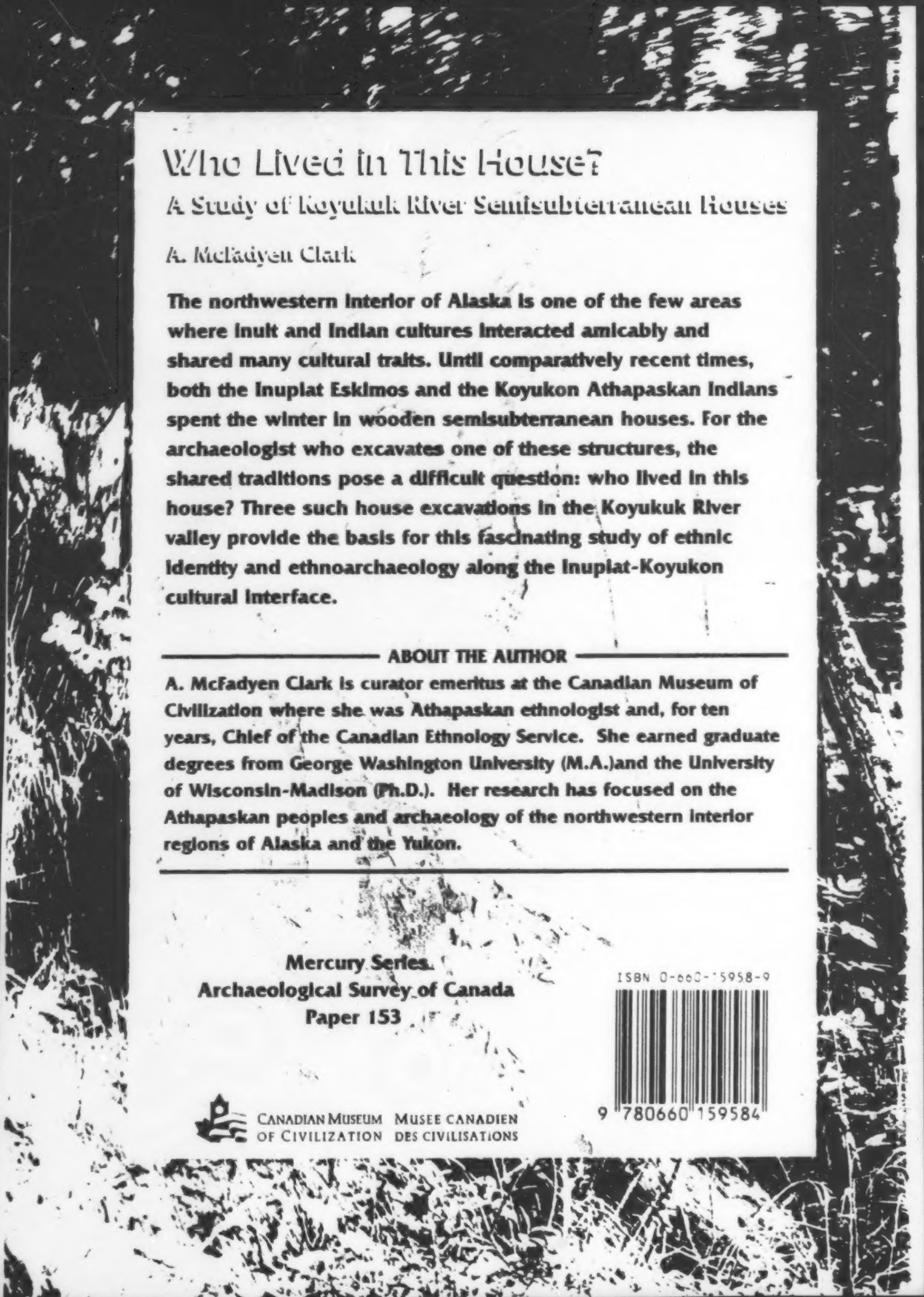


Plate 17. Fish trap and weir section at the mouth of Lake Creek.

Plate 18. Bark shingle pressed onto collapsed roof poles, Lake Creek.



Who Lived in This House?

A Study of Koyukuk River Semisubterranean Houses

A. McFadyen Clark

The northwestern interior of Alaska is one of the few areas where Inuit and Indian cultures interacted amicably and shared many cultural traits. Until comparatively recent times, both the Inupiat Eskimos and the Koyukon Athapaskan Indians spent the winter in wooden semisubterranean houses. For the archaeologist who excavates one of these structures, the shared traditions pose a difficult question: who lived in this house? Three such house excavations in the Koyukuk River valley provide the basis for this fascinating study of ethnic identity and ethnoarchaeology along the Inupiat-Koyukon cultural interface.

ABOUT THE AUTHOR

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